

Ref No. PU-VC/2022/EX-006

Date: 16 June 2022

To,

Dr. Naresh Kumar Sharma
Under Secretary - CPP I/PU
University Grants Commission
Ministry of Education, Government of India
Bahadurshaj Zafar Marg
New Delhi 110002
naresh.ugc@nic.in

Subject: Establishment of Plaksha University, Punjab.

Reference: Your letter F No 8-29/2021(CPP-I/PU) dated March 25 2022

Sir

We are thankful for the inclusion of the name of the University in the list of universities maintained by the UGC established as per section 2 (f) of the UGC Act, 1956.

As required, the prescribed Proforma for submission of information by State Private Universities for ascertaining their norms and standards has been completed and is hereby presented along with supporting documents (in hard copy + soft copy in the pen drive).

The Plaksha University, Punjab Act, 2021 (Punjab Act No. 21 of 2021) dated December 09, 2021, has been enacted and is enclosed in Appendix XXI.

The University undertakes to adhere to the UGC Regulations, particularly the UGC (Establishment of and maintenance of standards in Private Universities) Regulations, 2003.

Kindly let us know if any further information and/or document is required.

We shall be thankful for your kind consideration.

With regards,

Sincerely


Prof. Rudra Pratap
Vice Chancellor

Enclosure : As above

Copy to :

- 1 Dr.Surender Singh
Additional Secretary
University Grants Commission
Ministry of Education, Government of India
Bahadurshaj Zafar Marg
New Delhi 110002
ssingh.ugc@nic.in
- 2 Special Secretary to Government of Punjab
Department of Higher Education
Room No 408 - 4 th Floor - Mini Secretariat
Chandigarh - 160 009 - Punjab





UNIVERSITY GRANTS COMMISSION
BAHADUR SHAH ZAFAR MARG NEW DELHI - 110 002

Proforma for submission of information by State Private Universities for ascertaining their norms and standards

A. Legal Status

| | | |
|-----|---|--|
| 1.1 | Name and Address of the University | Plaksha University, Punjab Block B, Sector-101 Alpha, IT City, SAS Nagar, Mohali, Punjab 140306 |
| 1.2 | Headquarters of the University | Plaksha University, Punjab Block B, Sector-101 Alpha, IT City, SAS Nagar, Mohali, Punjab 140306 |
| 1.3 | Information about University a. Website b. E-mail c. Phone Nos. d. Fax Nos. Information about Authorities of the University a. Ph. (including mobile), Fax Nos. and e-mail of Chancellor b. Ph. (including mobile), Fax Nos. and e-mail of Vice-Chancellor c. Ph. (including mobile), Fax Nos. and e-mail of Registrar d. Ph. (including mobile), Fax Nos. and e-mail of Finance Officer | Website: www.plaksha.edu.in Email: info@plaksha.edu.in Phone: 0172 – 6671044 Fax no.: Not available Chancellor • Email: chancellor@plaksha.edu.in • Phone: 0172 – 6671044 Vice-Chancellor • Email: vc@plaksha.edu.in • Phone: 0172 – 6671044 Registrar • Email: registrar@plaksha.edu.in • Phone: 0172 – 6671044 Finance Officer • Email: finance@plaksha.edu.in • Phone: 0172 – 6671044 |
| 1.4 | Date of Establishment | 20 August 2021 |
| 1.5 | Name of the Society/Trust promoting the University (Information may be provided in the following format) (Copy of the registered MoA/ Trust Deed to be enclosed) | Reimagining Higher Education Foundation Copy of MOA/ AOA of the not-for-profit company under Section 8 of the Company Act is enclosed in Appendix XX A & B. |
| 1.6 | Composition of the Society/Trust (Details to be provided in Appendix-I) | The composition of the Sponsoring body is provided in Appendix I |
| 1.7 | Whether the members of the Society/Trust are members in other Societies/Trusts or in the Board of Governors in companies? If yes, please provide details in the following format:- (Details to be provided in Appendix-II) | Yes. Details provided in Appendix II |
| 1.8 | Whether the promoting Society/Trust is involved in promoting/ running any other University/ Educational Institution? If yes, please give details in the following format:- (Details to be provided in Appendix-III) | The promoting Sponsoring Body is not involved in promoting or running any other university/ educational institution. Appendix III is thus not applicable. |
| 1.9 | Whether the promoting society/trust is involved in promoting/running activities other than educational? If yes, please give details in the following format:- (Details to be provided in Appendix-IV) | The promoting Sponsoring Body is not involved in promoting/running activities other than educational activities. Appendix IV is thus not applicable. |



| | | |
|------|--|---|
| 1.10 | Act and Notification under which established (copy of the Act & Notification to be enclosed) | Plaksha University, Punjab has been established by the Government of Punjab under Punjab Private Universities Policy, 2010 and UGC Act 1956. A copy of the Plaksha University, Punjab Act, 2021 (Punjab Act No. 21 of 2021) dated December 09, 2021, is enclosed in Appendix XXI A to C. |
| 1.11 | Whether the University has been established by a separate State Act? | Yes, Plaksha University, Punjab has been established under Punjab Private Universities Policy 2010 / UGC Act 1956. |

B. Organization Description

| | | |
|-----|--|--|
| 2.1 | Whether Unitary in nature (as per the UGC Regulation) | Yes |
| 2.2 | Territorial Jurisdiction of the University as per the Act | State of Punjab |
| 2.3 | Details of the constituent units of the University, if any, as mentioned in the Act | The University offers programs in interdisciplinary areas. |
| 2.4 | Whether any off-campus centre(s) established? If yes, please give details of the approval granted by the State Government and UGC. (Details to be provided in Appendix-V) | No, the University has no off-campus centre(s). <u>Appendix V</u> is thus not applicable |
| 2.5 | Whether any off-shore campus established? If yes, please give details of the approval granted by the Government of India and the host country. (Details to be provided in Appendix-VI) | No, the University has not established any off-shore campus. <u>Appendix VI</u> is thus not applicable |
| 2.6 | Does the University offer a distance education programme? If yes, whether the courses run under distance mode are approved by the competent authority? | No, the University does not offer any distance education programmes as of now. |
| 2.7 | Whether the University has established study centre(s)? If yes, please provide details and whether these study centres are approved by the competent authority of the University and UGC? (Details to be provided in Appendix-VII) | No, the University has not established any study centre. <u>Appendix VII</u> is thus not applicable |

C. Academic Activities Description

3. Academic Programmes

| | | |
|-----|---|--|
| 3.1 | Details of the programmes permitted to be offered by Gazette Notification of the State Government and its reference (Details to be provided in Appendix-VIII) | The University is allowed "to provide for instructions, teaching, education, research and training at all levels in disciplines of higher education including engineering, humanities, social sciences, life sciences, management, e-learning, and online education and training in any other stream and subject, as per the needs of the industry and the society in general, as may be deemed necessary by the University." Details of the sanctioned intake and actual enrolment for the academic year 2021-22 are provided in <u>Appendix - VIII</u> . |
|-----|---|--|



| 3.2 | Current number of academic programmes/ courses offered by the University (Details to be provided in Appendix-IX) | <p>Plaksha University, Punjab is currently offering the following programs:</p> <p>Undergraduate program (B.Tech) Four majors in:</p> <ul style="list-style-type: none"> • Computer Science and Artificial Intelligence (CSAI) • Robotics and Cyber-Physical Systems (RCPS) • Biological Systems Engineering (BSE) • Data Science, Economics and Business (DSEB) <p>Duration: 4 years</p> <p>Postgraduate diploma program</p> <ul style="list-style-type: none"> • Technology Leaders Program - with a specialization in Artificial Intelligence and Machine Learning, with courses in design and systems thinking, leadership and an Industry capstone project. Incoming students have an undergraduate degree and ~80% have prior work experience. <p>Duration: 1 year</p> <p>PhD program</p> <ul style="list-style-type: none"> • Offered all research areas of full-time faculty <p>Duration: 4 years + 1 year extension (optional)</p> <p>Details of the sanctioned intake and actual enrolment for 2021-22 are as below:</p> <table border="1"> <thead> <tr> <th>Programme</th> <th>Sanctioned Intake (2021-22)</th> <th>Actual Enrollment (2021-22)</th> </tr> </thead> <tbody> <tr> <td>UG</td> <td>120</td> <td>92</td> </tr> <tr> <td>PG Diploma</td> <td>60</td> <td>51</td> </tr> <tr> <td>PhD</td> <td>10</td> <td>1</td> </tr> </tbody> </table> | Programme | Sanctioned Intake (2021-22) | Actual Enrollment (2021-22) | UG | 120 | 92 | PG Diploma | 60 | 51 | PhD | 10 | 1 |
|------------|--|---|-----------|-----------------------------|-----------------------------|----|-----|----|------------|----|----|-----|----|---|
| Programme | Sanctioned Intake (2021-22) | Actual Enrollment (2021-22) | | | | | | | | | | | | |
| UG | 120 | 92 | | | | | | | | | | | | |
| PG Diploma | 60 | 51 | | | | | | | | | | | | |
| PhD | 10 | 1 | | | | | | | | | | | | |
| 3.3 | Whether approvals of relevant statutory council(s) such as AICTE, BCI, DEC, DCI, INC, MCI, NCTE, PCI, etc. have been taken to - start new courses, to increase intake. If yes please enclose copy of approval and give course- wise details in the following format:- (Details to be provided in Appendix - X) | Not applicable | | | | | | | | | | | | |
| 3.4 | If the University is running courses under distance mode, please provide details about the students enrolled in the following format:- (Details to be provided in Appendix-VII) | No, University is not running any course under distance mode. Appendix VII is thus not applicable | | | | | | | | | | | | |
| 3.5 | Temporal plan of academic work in the University - Semester system/ Annual system | The University follows Semester System of teaching and evaluation | | | | | | | | | | | | |
| 3.6 | Whether the University is running any course which is not specified under Section 22 of the UGC Act, 1956? If yes, please give details (Details to be provided in Appendix - XI) | The University is not running any course which is not specified under Section 22 of the UGC Act, 1956. Appendix XI is thus not applicable. | | | | | | | | | | | | |



4. Student Enrolment and Student Support

| | |
|-----|---|
| 4.1 | Number of students enrolled in the University for the current academic year according to regions and countries (Please give separate information for main campus and off-campus/off-shore campus) |
|-----|---|

| Particulars | | No. of students from the same State where the University is located | No. of students from other States | No. of NRI students | No. of overseas students excluding NRIs | | Grand Total |
|-------------|---|---|-----------------------------------|---------------------|---|----------------------------------|-------------|
| | | | | | Foreign Students | Person of Indian Origin students | |
| UG | M | 4 | 58 | 0 | 1 | 0 | 63 |
| | F | 1 | 28 | 0 | 0 | 0 | 29 |
| | T | 5 | 86 | 0 | 1 | 0 | 92 |
| PG Diploma | M | 38 | 0 | 0 | 0 | 0 | 38 |
| | F | 13 | 0 | 0 | 0 | 0 | 13 |
| | T | 51 | 0 | 0 | 0 | 0 | 51 |
| Ph.D. | M | 1 | 0 | 0 | 0 | 0 | 1 |
| | F | 0 | 0 | 0 | 0 | 0 | 0 |
| | T | 1 | 0 | 0 | 0 | 0 | 1 |

M-Male, F-Female, T-Total

| | | |
|-----|-------------------------------|--|
| 4.2 | Category-wise no. of students | This information was not sought at the time of admission, hence not available. |
|-----|-------------------------------|--|

| | |
|-----|---|
| 4.3 | Details of two batches of students admitted |
|-----|---|

| Particulars | Batch 1 | | | Batch 2 ¹ | | |
|---|----------------------|--------------------------|-------|----------------------|------|-------|
| | Year of Entry - 2021 | | | Year of Entry - NA | | |
| | UG | PG | Total | UG | PG | Total |
| No. admitted to the programme | 92 | 51 (PG Diploma +1 (PhD)) | 144 | N. A | N. A | N. A |
| No. of Drop-outs | | | | | | |
| (a) Within 4 months of joining | 0 | 1 | 0 | | | |
| (b) Afterwards | 0 | 0 | 0 | | | |
| No. appeared for the final year examination | N. A | | | N. A | N. A | N. A |
| No. passed in the final exam | N. A | | | N. A | N. A | N. A |
| No. passed in first class | N. A | | | N. A | N. A | N. A |

| | | |
|-----|---|---|
| 4.4 | Does the University provide bridge/remedial courses to the educationally disadvantaged students? If yes, please give details | Yes, the University is providing bridge/ remedial courses to academically disadvantaged students who fulfil the eligibility conditions but are required to study some course(s) for getting on par with others. For example, remedial classes in Physics are provided during the first semester for undergraduate students who require it. Going forward, from the academic year 2022-23, the bridge courses on the subject such as Physics, Computer Science, Mathematics, etc., will be offered before the start of the first semester. |
| 4.5 | Does the University provide any financial help to the students from socially disadvantaged group? If yes, please give details | Yes, Plaksha University, Punjab provides very generous need-based financial aid to all students from economically disadvantaged groups, who meet the merit criteria, so that finances do not come in their way of securing a high-quality education. |

¹ The university came into existence on 20 August 2021. Thus, University has only one batch of students



| | | |
|-----|---|---|
| | | <p>All such students are required to apply for financial assistance on an application form prescribed for the purpose and help is provided to students based on their family's financial standing. Students are offered a scholarship that ranges anywhere from a 25% waiver on the tuition fee to a 100% waiver on the entire tuition fee, hostel fee and food charges.</p> <p>Several corporates are also providing need-based scholarships at Plaksha including:</p> <ol style="list-style-type: none"> 1. Bharti Scholarship, set up by Bharti Foundation, is a highly prestigious scholarship awarded to exceptional students from diverse socio-economic backgrounds to pursue full-time undergraduate studies at Plaksha University, Punjab. 2. Axis Bank Scholarship, set up by Axis Bank, seeks to enrich the talent pool that would be joining the workforce or going for higher education in the STEM domains with a positive bias towards women students and students from tier 2/3/4 towns. 3. The 'Ayyalasomayajula Lalitha' Scholarship Fund, set up by A.T.E. Chandra Foundation (ATECF), provides financial aid to deserving women students from less privileged backgrounds pursuing full-time postgraduate programs at Plaksha University, Punjab. <p>Support from other partners like V-Mart, Mphasis, MOSL, and InfoEdge is also reflected in the form of scholarships and financial aid to students from diverse socio-economic, gender and geographical backgrounds.</p> |
| 4.6 | In case the University is running M.Phil/Ph.D. programme, whether it is full time or part time and whether these programmes are run as per UGC Regulations,2009 on M.Phil/Ph.D. | <p>Yes, the university is running a Ph.D Programme (full-time) as per UGC Regulations, 2016.</p> <p>The University does not run M.Phil Programs yet.</p> |
| 4.7 | Whether the University have a website? If yes please give website address and whether the website regularly updated? | <p>Yes, the university has a website www.plaksha.edu.in which is regularly updated with all necessary information for all stakeholders - students, staff, and the general public in keeping with all regulations of the UGC</p> |
| 4.8 | How are the prospective students informed about criteria for admission, rules & regulations, facilities available, etc? | <p>Plaksha has an extensive outreach process across the country in which prospective students are informed about the vision of the University, its programs and faculty, criteria for admission, rules and regulations, facilities available at the campus, etc. The outreach includes the following:</p> <ul style="list-style-type: none"> • An exhaustive and comprehensive website with complete information on admissions • Collateral such as student flyers, brochures, information leaflets, posters, social media posts, and video content to spread the awareness far and wide. • A team of counsellors conducted close to 300 in-person and virtual sessions across 30 cities. These included school presentations, international and national seminars, faculty workshops, teacher training workshops, open houses, campus tours and career fairs. • Digital outreach and counsellor symposiums ensured greater visibility and awareness among students and teachers alike. • The program was also introduced internationally in the Middle East, Africa and neighbouring countries, from where we hope to recruit a number of students for the coming years. • Strategic and consistent brand representation across multiple platforms and international conferences like College Board, IC3, created increased brand visibility and saw Plaksha being represented by prestigious international institutions. • Mass emailers, SMS campaigns, and admissions webinars were designed to keep students informed throughout the outreach cycle. • A dedicated 24x7 helpline was set up to address student queries <p>Bringing in a diverse pool of applicants and generating interest among tier 2 cities were some of the key challenges addressed. The team extensively reached out to students at foundation-funded schools, government schools and NGOs that support students from underprivileged and rural backgrounds.</p> |



| | | <p>In all interactions with students and stakeholders, the focus continues to be on inclusivity and diversity. These key motivators define our outreach strategy in making Plaksha an institution that supports deserving students with a quality undergraduate education.</p> <p>The University received over a thousand applications for its founding undergraduate program from which a class of 92 students was created after a rigorous selection process.</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|------------------|--|--|------|-------------|------|--------------|--------------------------|------|---------|---------|--------|-----------------|-----------|--------|---------------|---------------------|--------|------------------|-----------|--------|----------------|----------------------------------|--------|----------------|---------------------------------|--------|---------------|---|--------|--------------|------------------------------|--------|
| 4.9 | <p>Whether any grievance redressal mechanism is available in the University? If yes, please provide details about the complaints received against malpractices, etc in the University in the following format: - (Details to be provided in Appendix-XII)</p> | <p>The University has constituted a Grievance Redressal Committee comprising a mix of faculty, staff, and founders. The members are as below:</p> <table border="1"> <thead> <tr> <th>Name</th> <th>Designation</th> <th>Role</th> </tr> </thead> <tbody> <tr> <td>Aditya Malik</td> <td>Dean of Academic Affairs</td> <td>Head</td> </tr> <tr> <td>SK Jain</td> <td>Founder</td> <td>Member</td> </tr> <tr> <td>Kanchi Gopinath</td> <td>Professor</td> <td>Member</td> </tr> <tr> <td>Monika Sharma</td> <td>Assistant Professor</td> <td>Member</td> </tr> <tr> <td>Sanjay Bhatnagar</td> <td>Registrar</td> <td>Member</td> </tr> <tr> <td>Amarjeet Singh</td> <td>Vice President of Administration</td> <td>Member</td> </tr> <tr> <td>Vartika Bharti</td> <td>Senior Manager, Human Resources</td> <td>Member</td> </tr> <tr> <td>Kanchi Khanna</td> <td>Senior Director – UG, Outreach & Admissions</td> <td>Member</td> </tr> <tr> <td>Manoj Kannan</td> <td>Associate Dean, Student Life</td> <td>Member</td> </tr> </tbody> </table> <p>Grievances may be raised to any member of the Grievance Redressal Committee and decisions are expected to be taken in a time-bound manner. No formal grievances have been raised so far since the inception of the University.</p> | Name | Designation | Role | Aditya Malik | Dean of Academic Affairs | Head | SK Jain | Founder | Member | Kanchi Gopinath | Professor | Member | Monika Sharma | Assistant Professor | Member | Sanjay Bhatnagar | Registrar | Member | Amarjeet Singh | Vice President of Administration | Member | Vartika Bharti | Senior Manager, Human Resources | Member | Kanchi Khanna | Senior Director – UG, Outreach & Admissions | Member | Manoj Kannan | Associate Dean, Student Life | Member |
| Name | Designation | Role | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Aditya Malik | Dean of Academic Affairs | Head | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SK Jain | Founder | Member | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Kanchi Gopinath | Professor | Member | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Monika Sharma | Assistant Professor | Member | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sanjay Bhatnagar | Registrar | Member | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Amarjeet Singh | Vice President of Administration | Member | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Vartika Bharti | Senior Manager, Human Resources | Member | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Kanchi Khanna | Senior Director – UG, Outreach & Admissions | Member | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Manoj Kannan | Associate Dean, Student Life | Member | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

5. Curriculum, Teaching Learning Process/Method, Examination/EvaluationSystem

| 5.1 | <p>Which University body finalized the curriculum? The composition of the body may be given. (Board of Studies, Academic Council, Board of Management)</p> | <p>The Plaksha University, Punjab curriculum was developed through an extensive brainstorming and consulting process as described below.</p> <p>Plaksha has a Global Academic Advisory Board comprising Deans and senior academic leaders of top global institutions.</p> <table border="1"> <thead> <tr> <th>Name</th> <th>Designation</th> </tr> </thead> <tbody> <tr> <td>Dr. Abhijit Banerjee</td> <td>Co-Founder, J-PAL Professor of Economics, MIT Nobel Laureate</td> </tr> <tr> <td>Dr. Anant Agarwal</td> <td>CEO, edX Professor of EECS, MIT</td> </tr> <tr> <td>Dr. Arvind Raman</td> <td>Executive Associate Dean, Faculty and Staff, Robert V. Adams Professor in Mechanical Engineering, Purdue University</td> </tr> <tr> <td>Dr. Ashish Nanda</td> <td>Senior Lecturer, Harvard Business School</td> </tr> <tr> <td>Dr. BN Jain</td> <td>Former Director, IIM Ahmedabad Former Vice Chancellor, BITS Pilani Former Deputy Dean, IIT Delhi</td> </tr> <tr> <td>Dr. Frances Ligler</td> <td>Ross Lampe Distinguished Professor, NC State & UNC Chapel Hill</td> </tr> <tr> <td>Dr. Howard Griffiths</td> <td>Professor of Plant Ecology, Vice-Chancellor's Special Advisor on India, University of Cambridge</td> </tr> <tr> <td>Dr. James Holloway</td> <td>Provost and EVP for Academic Affairs, University of New Mexico</td> </tr> <tr> <td>Dr. Jennifer Cochran</td> <td>Shriram Chair, Department of Bioengineering, Stanford University</td> </tr> <tr> <td>Dr. Julia Ross</td> <td>Dean of Engineering, Virginia Tech</td> </tr> </tbody> </table> | Name | Designation | Dr. Abhijit Banerjee | Co-Founder, J-PAL Professor of Economics, MIT Nobel Laureate | Dr. Anant Agarwal | CEO, edX Professor of EECS, MIT | Dr. Arvind Raman | Executive Associate Dean, Faculty and Staff, Robert V. Adams Professor in Mechanical Engineering, Purdue University | Dr. Ashish Nanda | Senior Lecturer, Harvard Business School | Dr. BN Jain | Former Director, IIM Ahmedabad Former Vice Chancellor, BITS Pilani Former Deputy Dean, IIT Delhi | Dr. Frances Ligler | Ross Lampe Distinguished Professor, NC State & UNC Chapel Hill | Dr. Howard Griffiths | Professor of Plant Ecology, Vice-Chancellor's Special Advisor on India, University of Cambridge | Dr. James Holloway | Provost and EVP for Academic Affairs, University of New Mexico | Dr. Jennifer Cochran | Shriram Chair, Department of Bioengineering, Stanford University | Dr. Julia Ross | Dean of Engineering, Virginia Tech |
|-----------------------------|--|--|------|-------------|-----------------------------|--|--------------------------|------------------------------------|-------------------------|---|-------------------------|--|--------------------|--|---------------------------|--|-----------------------------|---|---------------------------|--|-----------------------------|--|-----------------------|------------------------------------|
| Name | Designation | | | | | | | | | | | | | | | | | | | | | | | |
| Dr. Abhijit Banerjee | Co-Founder, J-PAL Professor of Economics, MIT Nobel Laureate | | | | | | | | | | | | | | | | | | | | | | | |
| Dr. Anant Agarwal | CEO, edX Professor of EECS, MIT | | | | | | | | | | | | | | | | | | | | | | | |
| Dr. Arvind Raman | Executive Associate Dean, Faculty and Staff, Robert V. Adams Professor in Mechanical Engineering, Purdue University | | | | | | | | | | | | | | | | | | | | | | | |
| Dr. Ashish Nanda | Senior Lecturer, Harvard Business School | | | | | | | | | | | | | | | | | | | | | | | |
| Dr. BN Jain | Former Director, IIM Ahmedabad Former Vice Chancellor, BITS Pilani Former Deputy Dean, IIT Delhi | | | | | | | | | | | | | | | | | | | | | | | |
| Dr. Frances Ligler | Ross Lampe Distinguished Professor, NC State & UNC Chapel Hill | | | | | | | | | | | | | | | | | | | | | | | |
| Dr. Howard Griffiths | Professor of Plant Ecology, Vice-Chancellor's Special Advisor on India, University of Cambridge | | | | | | | | | | | | | | | | | | | | | | | |
| Dr. James Holloway | Provost and EVP for Academic Affairs, University of New Mexico | | | | | | | | | | | | | | | | | | | | | | | |
| Dr. Jennifer Cochran | Shriram Chair, Department of Bioengineering, Stanford University | | | | | | | | | | | | | | | | | | | | | | | |
| Dr. Julia Ross | Dean of Engineering, Virginia Tech | | | | | | | | | | | | | | | | | | | | | | | |

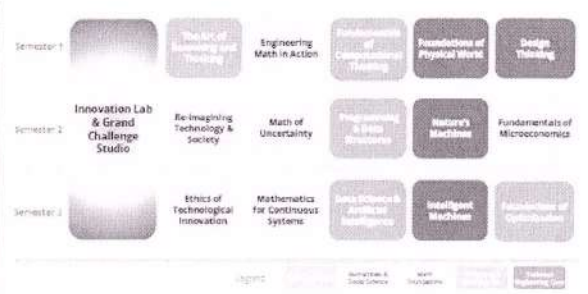


| | | <p>Dr. Kaushik Basu Professor of Economics & Carl Marks Professor of International Studies, Cornell University</p> <p>Dr. Krishna Palepu Ross Graham Walker Professor of Business Administration, Former Senior Associate Dean, Harvard Business School</p> <p>Dr. Pankaj Jalote Founding Director, IIT Delhi</p> <p>Dr. Rajesh Gupta Professor and Qualcomm Endowed Chair, Computer Science & Engineering, UC San Diego</p> <p>Dr. Shankar Sastry Former Dean of Engineering, Professor of EECS, UC Berkeley</p> <p>Dr. Sharad Malik Chair, Department of Electrical Engineering, Princeton University</p> <p>Dr. Sriram Rajamani Managing Director, Microsoft Research Labs, India</p> <p>Dr. Vijay Kumar Nemirovsky Family Dean, Penn Engineering, University of Pennsylvania</p> <p>Dr. Yannis Yortsos Dean of Viterbi School of Engineering, University of Southern California</p> <p>Dr. Venkatesh Narayanmurthi Benjamin Peirce Professor of Technology & Public Policy, Harvard University</p> <p>The Advisory Board met over multiple meetings hosted at MIT (Cambridge) and otherwise, to arrive at the four undergraduate majors, namely:</p> <ul style="list-style-type: none"> • Computer Science and Artificial Intelligence • Robotics and Cyber-Physical Systems • Biological Systems Engineering • Data Science, Economics and Business <p>An initial draft of the undergraduate curriculum was then created in a workshop held between the faculty of Plaksha and faculty of Purdue University, USA which is an academic partner.</p> <p>Thereafter, the detailed curriculum for each major was developed in meetings held over 3 months by a Curriculum Advisory Board of 6-8 experts in each major, including the full-time faculty at Plaksha and external disciplinary experts. For example, the team who drafted the curriculum for Biological Systems Engineering included Dr Rudra Pratap (Vice-Chancellor) as Chairperson, Dr Ravi Jasuja (Director of Translational R&D, BWH, Harvard Medical School), Dr Rohit Bhargava (Bliss Faculty Scholar and Professor of Bioengineering, University of Illinois at Urbana-Champaign), Dr Monika Sharma (Plaksha faculty), Dr. Drha Joshi (Plaksha faculty), Dr Mitali Samaddar (Consultant), Inputs from practitioners were also taken to ensure relevance to needs of the industry. A similar approach was used for all other majors.</p> <p>Finally, the curriculum for all programs was approved by the Academic Council of the University and the Board of Management, as per the process defined. The Academic Council comprises:</p> <table border="1"> <thead> <tr> <th>Name</th> <th>Designation</th> </tr> </thead> <tbody> <tr> <td>Dr. Rudra Pratap</td> <td>Vice Chancellor, Plaksha University, Punjab</td> </tr> <tr> <td>Dr. Aditya Malik</td> <td>Dean, Academic Affairs, Professor, Plaksha University, Punjab</td> </tr> <tr> <td>Dr. Monika Sharma</td> <td>Assistant Professor, Plaksha University, Punjab</td> </tr> <tr> <td>Dr. Ravi Jasuja</td> <td>Director, Translational Research and Discovery, BWH, Harvard Medical School</td> </tr> <tr> <td>Dr. Ravi Kothari</td> <td>Former Chief Scientist, IBM Research</td> </tr> </tbody> </table> | Name | Designation | Dr. Rudra Pratap | Vice Chancellor, Plaksha University, Punjab | Dr. Aditya Malik | Dean, Academic Affairs, Professor, Plaksha University, Punjab | Dr. Monika Sharma | Assistant Professor, Plaksha University, Punjab | Dr. Ravi Jasuja | Director, Translational Research and Discovery, BWH, Harvard Medical School | Dr. Ravi Kothari | Former Chief Scientist, IBM Research |
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| | | <p>India Former Professor of Computer Science, Ashoka University Janaki and KA Iyer Chair Professor, Computer Science and Engineering Department, IIT Delhi Chairman, Robert Bosch Center for Cyber Physical Systems Professor, EECS, Indian Institute of Science, Bangalore</p> <p>Dr. Naveen Garg</p> <p>Dr. Bharadwaj Amrutur</p> <p>Govt. nominee</p> <p>The Composition of the Curriculum Advisory Board and Board of Management may be seen in Appendix XVIII</p> |
| 5.2 | What are the Rules/ regulations/ procedure for revision of the curriculum and when was the curriculum last updated? | <p>Revision in the curriculum may be taken up based on inputs received from the Academic Advisory Board, Academic Council, industry needs, global trends, or based on classroom experience of faculty.</p> <p>Faculty may also propose changes to the curriculum and submit the same to the Dean of Academic Affairs. Minor curriculum changes may be approved by the Dean and Vice-Chancellor. Significant changes may be taken to the Academic Council for review. The Academic Council meets four times per year.</p> <p>The last meeting of the Academic Council was held on 13 April 2022, wherein the latest curriculum was discussed and approved.</p> |
| 5.3 | Whether approval of statutory bodies such as board of Studies, Academic Council and Board of Management of the University has been taken to start various courses? If yes, please enclose extracts of the minutes. | <p>Yes, approval to start new Programs and Courses of Study was obtained from the statutory bodies including:</p> <ol style="list-style-type: none"> 1. The Academic Council 2. Board of Management, and 3. Governing Body <p>Relevant extracts of their minutes, as required, are given in Appendix XXIII A to D</p> |
| 5.4 | Furnish details of the following aspects of curriculum design: Innovation such as modular curriculum/ inter/ multidisciplinary approach | <p>The UG program has been designed to help students develop academic depth as well as skillsets and mindsets that will stay with the students throughout their life, irrespective of the career paths they choose. The curriculum includes many innovative and distinctive features such as:</p> <p>1. Multidisciplinary Approach and Interdisciplinary Perspective</p> <p>Plaksha University, Punjab offers four undergraduate majors, which focus on contemporary and emerging areas of study and research. This requires students to interact with and draw from multiple fields of expertise; make connections between disciplines, analyze the humanistic, socio-economic, and technical contexts of problems, in addition to learning how to create effective and impactful engineering solutions.</p> <p>2. Application Domain Tracks</p> <p>The Application Domain Tracks are a series of 1 credit modules that help students inculcate skills and mindsets related to research and entrepreneurship. Through these tracks, students will contribute to ongoing research projects in Plaksha's flagship grand challenge research centers and may work with faculty on their research or on approved external projects in industry/government or startups. Across semesters, students will have the option to work across different disciplinary areas or focus on one area, but the purpose is for them to appreciate the relevance of their coursework to a variety of challenges and areas.</p> |



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| | | <p>3. Project-based and Experiential curriculum</p> <p>At Plaksha University, Punjab our approach to education is project-based, and students are encouraged to be innovative and inquisitive. Most classes and courses offered have an in-built lab component in which students apply their classroom learning to real-world problems.</p> <p>Plaksha University, Punjab has state-of-the-art maker spaces and research labs which are incorporated into the curriculum, thereby giving students an environment to learn by creating and doing. This will help foster a tinkering and problem-solving mindset, immersing students in experiential learning from day one.</p> <p>4. Freshmore Curriculum</p> <p>Freshmore is a foundational, common, and core aspect of the curriculum at Plaksha University, Punjab. Spanning across the first three semesters, it provides all students with an interdisciplinary foundation across key areas such as Computing and Data Science, Humanities, Self and Leadership, Quantitative Analysis, Technical Core, etc. such that they come across an integrated whole, not segmented topics. All students at Plaksha, hence, get to experience a flavor of all 4 major disciplines before finalizing their major based on their interest, in Semester 4.</p>  <p>5. Innovation Lab and Grand Challenge Studios (IL/GC)</p> <p>A flagship Plaksha experience, IL/GC is a 4-year journey that introduces students to Grand Challenges and Sustainable Development Goals at the interface of societal needs and technological capabilities. It offers the opportunity for students to develop an interdisciplinary appreciation for engineering from a technical perspective as well as from a global and historical perspective. Integrated, project-based learning through the four-year program will be driven by Grand Challenge themes and more grass roots level industry or community partnerships or faculty research. The former, referred to as Grand Challenge (GC) Studios, are the flagship focus grand challenge problem areas for Plaksha. The latter, referred to as Innovation Labs (IL), will be driven by long term innovation challenge area related to industry, community partnerships or by faculty research. Students will have the opportunity to experience the project through an extended design-development-delivery cycle and to take on more leadership roles within the project.</p> |
| 5.5 | <p>Has the University conducted an academic audit? If yes, please give details regarding frequency and its usage.</p> | <p>The Office of Academic Affairs will conduct an internal audit of the undergraduate program every semester, and will cover the following areas:</p> <ul style="list-style-type: none"> • Individual and collective student performance and academic progress, and whether desired learning objectives are being met. Strategies on how to help students who may need remedial support |



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| | | <ul style="list-style-type: none"> • Ensuring program delivery is in line with the objectives • Determining the workload of students and whether there is need to optimize • Student feedback on courses and potential areas of improvement • Adequacy of LMS and online learning resources • Review of lab infrastructure, teaching assistant support and any improvements needed • Any curriculum-related changes needed to meet the desired objectives <p>The Academic Affairs Office will also conduct an internal audit of the postgraduate diploma program every year, which will cover the aforementioned areas, as well as feedback from industry/ recruiters.</p> <p>In addition, Plaksha has the following processes for continuous improvement of academic programs:</p> <ul style="list-style-type: none"> • The Academic Affairs Office facilitates a meeting of all faculty across disciplines approximately one a month to discuss academic progress and any academic issues faced by students. • A Collaboratory for Innovation in Education is being conceptualized to drive pedagogical innovation and evidence-based research on learning and cognition. This center will have researchers as well as data analysts who will continuously track learning data of students, identify patterns and trends, flag any issues, and give recommendations to faculty for better learning outcomes • The Academic Council which includes both internal and external academicians meet once every quarter, reviews academic progress and gives its recommendations |
| 5.6 | <p>Apart from classroom instruction, what are the other avenues of learning provided for the students? (Example: Projects, Internships, Field trainings, Seminars, etc.)</p> | <p>In addition to the classroom experience, which already includes many avenues for interdisciplinary learning (specified in 5.4), students are also exposed to the following:</p> <ul style="list-style-type: none"> • Grand Challenges Scholars Program: Plaksha is a member university of the National Academy of Engineering's (USA) Grand Challenges Scholars Program (GCSP), one of the few Indian universities with this distinction. The GCSP is a multi-year, research-based program designed to prepare students to be 21st-century problem solvers of the world's grand challenges. The GCSP includes unique experiences that combine coursework, research, extracurricular activities, internships, study abroad, and volunteer opportunities. All students at Plaksha are eligible to enrol in the GCSP program. The National Academy of Engineering (NAE) has broadly defined its fourteen challenges, based on the Sustainable Development Goals, across four themes - sustainability, health, security, and joy of living. The GCSP at Plaksha will provide our students with the opportunity to engage with a worldwide network of Grand Challenges Scholars, thereby allowing for a multicultural and multidisciplinary exchange of ideas to develop solutions that will require not only technical depth but also social, ethical, and cultural awareness. • Life skills courses: These courses enable students to acquire practical skills which are essential but are rarely taught. These include electrical repairing, carpentry, plumbing, cooking, meditation, Pilates, self-defense, yoga, etc. and will be offered periodically. These "life skills" courses shall be offered for up to 1 credit and assigned a non-letter grade such as Pass or Fail. • Mentorship program: Each student is assigned a faculty |



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| | <p>member who serves as an advisor and primary point of contact for students' academic, career and personal growth. Faculty members advise students on crucial academic matters such as choice of academic courses, electives, projects, internships, etc.</p> <ul style="list-style-type: none"> • InfoEdge Center for Entrepreneurship: By virtue of being a new institution founded on principles of philanthropy and entrepreneurial spirit, Plaksha will encourage students to develop entrepreneurial mindsets and risk-taking attitudes. The InfoEdge Center for Entrepreneurship will act as a catalyzing agent and support system for students through coursework, real-world exposure, mentorship opportunities, project work and capstones. Students can also choose to work on creating startups, incubate their startups with the centre, and will receive continued mentorship through the Plaksha Entrepreneur Support Program (PESP). • Guest Sessions/ Seminars: The Guest Sessions are one of the premier attractions at Plaksha. Through these sessions, students get the opportunity to directly interact with global leaders and domain experts. These leaders discuss a wide range of topics including the latest industry outlooks, ongoing research and developments, valuable life experiences, etc. • Colloquiums: These are a series of academic seminars led by internal faculty and external speakers with an objective to create exposure to students, faculty, and teaching/ research assistants about the happening research. • Tutorials: Tutorials are scheduled for students to discuss problems, revisit concepts, and additional academic support from teaching assistants and faculty members • Internship and Career Opportunities / Training: The Career Development Office at Plaksha trains students for various projects, interviews and professional skill-building sessions, in addition to facilitating internship, capstone and recruitment drives. <p>Further, there is an active Student Life support system that includes support for Sports and Adventure, Clubs and Societies, Community Service and other activities that build the leadership, social and emotional skills of students, and develops them as well-rounded individuals.</p> |
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| 5.7 | Please provide details of the examination system (Whether examination based or practical based) | <p>The University has adopted a comprehensive continuous assessment and evaluation system which is based on learning outcomes and a student's holistic performance in lecture, practice, and lab components.</p> <p>UG Program Courses are delivered in either of these modes: (a) Lecture only mode (3-hour lecture per week) (b) Lecture- lab mode (1 hour lecture + 2-hour lab per week) (c) Lecture-practice mode (1 hour lecture + 1 hour practice + 2 hours lab per week) (d) Practice only mode (1-hour practice + 2 hours lab per week)</p> <p>The following assessment system applies to each of these modes: (a) Lecture-only mode: At least 50% of the evaluation will happen through one or more non-proctored assessments such as take-home assignments/projects (individual or team-based), homework and course interviews (viva-voce) (b) Lecture-lab and lecture-practice mode: At least 50% of the evaluation will happen through projects. Not more than 50% of the evaluation happens through written exams (mid-semester and end-semester exams).</p> <p><i>General assessment guidelines:</i></p> <ul style="list-style-type: none"> • For courses which have a lab or practice components, students must successfully pass both written exams and lab/practice exam components. • Instructors set the minimum passing criteria for lab and practice components at the beginning of the semester. • For all courses, at most 20% of the evaluation involves a combination of peer assessments and self-reflection. This portion of the assessment is done during the evaluations outside the purview of the written exams. <p>PG Diploma Program</p> <ul style="list-style-type: none"> • The Tech Leaders Program is divided into eight academic terms. In each term, multiple courses are offered. Some of these courses are taken by full-time faculty at Plaksha, and many others are taken by international and national visiting faculty. • A common grading scheme is followed across all courses. Within this grading scheme, the assessment method for each course is determined by the respective faculty for that course and may include a mix of written examinations, assignments, project work (individual or group projects), peer assessment, quizzes, reflections etc. The assessment patterns are announced at the beginning of each course. • The Director of the Program works with each faculty to ensure consistency of grading with academic policies. |
| 5.8 | What methods of evaluation of answer scripts does the University follow? Whether external experts are invited for evaluation? | <p>UG and PG diploma Program</p> <ul style="list-style-type: none"> • Under the continuous evaluation system that the university has adopted, the course instructor notifies at the very beginning of the semester the learning assessment matrix. The matrix may include written examinations, assignments, projects (individual or group projects), peer-review, quizzes, reflections etc. • The evaluation of students' performance on these components is done by the respective course instructor. • For some components of evaluation (e.g., final presentation), the course instructor may choose to invite external panelists. • For the industry capstone project, inputs of the industry mentor are considered for evaluation. <p>PhD program Each scholar must submit a brief progress report not exceeding three pages to the Doctoral Research Committee (DRC) at the end of six months. DRC consist of at least three</p> |



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| | | <p>members as follows:</p> <p>(a) Research Supervisor,</p> <p>(b) One expert from a relevant field from outside the University (national or international) nominated by the research supervisor</p> <p>(c) One expert from a relevant field nominated by the Dean in consultation with the supervisor and</p> <p>(d) In case of co-supervisors, all supervisors will be the members of this committee.</p> <ul style="list-style-type: none"> • PhD candidates appear before the DRC annually to present progress of research work for evaluation and further guidance. • For final thesis examination, a PhD scholar is expected to submit a written thesis with the approval of the supervisor. The scholar must make an open presentation of their thesis work to the DRC. • It is the responsibility of the DRC to examine and assess the thesis, evaluate the thesis defence, and provide a written recommendation for the award of the PhD degree to the Dean. • In case the DRC recommends modifications to the thesis, the PhD scholar must re-submit the thesis along with the changes within six months. |
| 5.9 | Mention the number of malpractice cases reported during the last 3 years and how they are dealt with. | Nil |
| 5.10 | Does the University have a continuous internal evaluation system? | Yes, the university follows an academic system which provides for comprehensive continuous evaluation, customized to effectively assess, and evaluate the performance of students on the basis, of course, learning objectives and outcomes. At least 50% of the evaluation happens through one or more non-proctored assessments such as take-home assignments/projects (individual or team-based), homework and course interviews (viva-voce). |
| 5.11 | How are the question papers set to ensure the achievement of the course objectives? | At the beginning of each semester, the course instructor submits a detailed course structure with expected learning objectives and outcomes to the office of the Dean of Academic Affairs. The Deans in consultation with Program Director and course instructor ensure that question paper is in accordance with the course curricula and the expected learning outcomes. |
| 5.12 | State the policy of the University for the constitution of board of question paper setters, board of examiners and invigilators. | Each faculty creates assessment methods for their own course and submits them to the Office of Dean of Academic Affairs in consultation the with Program Director. |



5.13

How regular and time-bound are conduct of examinations and announcement of results? Substantiate with details of dates of examinations and announcement of results for the last 3 years. Details to be provided in the following format:

The University conducts examinations on the date(s) and time announced at the beginning of the semester and as per the Academic Calendar of the University.

Plaksha University, Punjab was established on 20 August 2021, and a three-year track record is hence evolving. The examination schedule for the academic year 2021-22 is given below:

UG Program

Semester 1 (Nov 2021 to Feb 2022)

| Date | Day | Event |
|------------------|-----------|--|
| December 24 | Friday | Last date for completing the mid-semester evaluation |
| February 7 to 11 | Mon – Fri | End semester Exam week |
| February 23 | Wednesday | Announcement of result |

*Semester 2 (Mar 2022 to Jun 2022)**

| Date | Day | Event |
|---------------|-----------|--|
| May 6 | Friday | Last date for completing the mid-semester evaluation |
| June 20 to 24 | Mon – Fri | End semester exam week |
| July 6 | Wednesday | Announcement of result |

The University follows 36 weeks of teaching in a 5-day week pattern. Each Academic Session shall consist of two regular semesters and a summer term, apart from vacations, and mid-semester break. Each regular semester (Semester 1 & 2) consists of up to fifteen weeks. Summer-term is of about eight weeks from July to August. The dates are subject to minor modifications due to Covid related uncertainties.

PG Diploma Program

The Tech Leaders Program has eight Terms in the Academic Calendar. Each Term runs for 5-7 weeks duration, and 3-5 courses are taught in each term. The evaluations are continuous comprising assignments, class activities, quizzes, projects, group tasks and written exams. Every course has one final exam which can be in form of a written exam or project or a report submission depending on the nature of the course. This exam is conducted during the last week of each term, and results are announced within 2 weeks of the end of the course.

| Academic Term | Term Schedule | Results Declaration |
|---------------|---|---------------------|
| 1 | 31 st Aug 2021 – 09 Oct 2021 | Before 23 Oct 2021 |
| 2 | 11 th Oct 2021 – 26 Nov 2021 | Before 10 Dec 2021 |
| 3 | 29 Nov 2021 – 05 Jan 2022 | Before 19 Jan 2022 |
| 4 | 06 Jan 2022 – 18 Feb 2022 | Before 04 Mar 2022 |
| 5 | 21 Feb 2022 – 01 Apr 2022 | Before 15 Apr 2022 |
| 6 | 05 Apr 2022 – 05 June 2022 | Before 19 June 2022 |
| 7 | 07 June 2022 – 01 July 2022 | Before 15 July 2022 |
| 8 | 05 July 2022 – 30 July 2022 | Before 14 Aug 2022 |



D. Admission Process

| <p>6.1</p> | <p>How are students selected for admission to various courses? Please provide faculty-wise information</p> <p>a. Through special entrance tests b. Through interviews c. Through their academic record d. Through combination of the above</p> <p>Please also provide details about the weightage give to the above</p> | <p>Admissions are open to all those students who fulfil the admission criteria laid down as per guidelines of the UGC and the University</p> <p>UG Program The selection process for the undergraduate program in the academic year 2021-22 involved a combination of the following:</p> <ul style="list-style-type: none"> • Holistic application form, including academic track record, essays, extra-curricular records etc. • Academic test scores may be one or more of Board examination results/ JEE/ SAT/ ACT/ KVPY. • Personal interview by a panel of experts and 'Innovation Challenge' <p>75% weightage is given to the admission application form including academic records and 25% to the interview. The admission process is common for students interested in any major.</p> <p>PG Diploma Program University follows a comprehensive process to evaluate candidates for admission to the PG program. The admission process comprises the following steps:</p> <ol style="list-style-type: none"> 1. Admission Application Form: Candidates submit details of their education, achievements, projects, internships, work experience and certifications. Initial screening of applicants is done based on information submitted in this form. This is an elimination stage. 2. Tech Aptitude Test: Candidates shortlisted in the 1st step appear in an online test to evaluate their competencies in Mathematics and Programming. Candidates with valid GRE/GMAT scores might be exempted from the Tech Aptitude Test. This is an elimination stage and candidates scoring less than 50% in the test are rejected at this stage. 3. Personal Interview: Candidates shortlisted from the online test are invited for a personal interview to assess their personality, career alignment, and communication skills <p>PhD Program Candidates fulfilling the eligibility criteria are considered for admission. The admissions committee shortlists candidates for interviews. Candidates found suitable after the interview and after seeking approval of the Vice Chancelloe are admitted with a full fellowship.</p> | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|--|---|--------------------------|---------------------------------------|--------|---|----|-----|---|-----|----|-----|---|-----|---|------|---|-----------|----|-------|---|------|---|------|---|
| <p>6.2</p> | <p>Whether the University is admitting students from national level entrance test or state level entrance test? If yes, please provide following details: -</p> | <p>Yes, the University considers students' scores in Grade 12 board exams, SAT, ACT, JEE mains and Pearson Undergraduate Entrance Examination (PUEE)</p> <table border="1"> <thead> <tr> <th>Name of the National/ state level entrance exam</th> <th>No. of students admitted</th> <th>% of students from the total admitted</th> <th>Remark</th> </tr> </thead> <tbody> <tr> <td>Grade 12 board exam or international equivalent</td> <td>51</td> <td>55%</td> <td>-</td> </tr> <tr> <td>SAT</td> <td>11</td> <td>12%</td> <td>-</td> </tr> <tr> <td>ACT</td> <td>1</td> <td>1.1%</td> <td>-</td> </tr> <tr> <td>JEE mains</td> <td>28</td> <td>30.4%</td> <td>-</td> </tr> <tr> <td>PUEE</td> <td>1</td> <td>1.1%</td> <td>-</td> </tr> </tbody> </table> | Name of the National/ state level entrance exam | No. of students admitted | % of students from the total admitted | Remark | Grade 12 board exam or international equivalent | 51 | 55% | - | SAT | 11 | 12% | - | ACT | 1 | 1.1% | - | JEE mains | 28 | 30.4% | - | PUEE | 1 | 1.1% | - |
| Name of the National/ state level entrance exam | No. of students admitted | % of students from the total admitted | Remark | | | | | | | | | | | | | | | | | | | | | | | |
| Grade 12 board exam or international equivalent | 51 | 55% | - | | | | | | | | | | | | | | | | | | | | | | | |
| SAT | 11 | 12% | - | | | | | | | | | | | | | | | | | | | | | | | |
| ACT | 1 | 1.1% | - | | | | | | | | | | | | | | | | | | | | | | | |
| JEE mains | 28 | 30.4% | - | | | | | | | | | | | | | | | | | | | | | | | |
| PUEE | 1 | 1.1% | - | | | | | | | | | | | | | | | | | | | | | | | |
| <p>6.3</p> | <p>Whether admission procedure is available on the University website and in the prospectus</p> | <p>Yes, the entire admission procedure has been published on the website and included in the prospectus that is available for prospective candidates to download.</p> | | | | | | | | | | | | | | | | | | | | | | | | |



| 6.4 | Please provide details of the eligibility criteria for admission in all the courses | <p>UG program</p> <ul style="list-style-type: none"> - Applicants should be currently enrolled in Grade 12 or equivalent or should have completed Grade 12 (or equivalent) - Should have studied mathematics till Grade 12 for all undergraduate programs - Should have studied physics till Grade 12 to apply to B. Tech in Computer Science and AI, Robotics and Cyber-Physical Systems and Biological Systems Engineering <p>PG Diploma program</p> <ul style="list-style-type: none"> - Graduate degree or equivalent or higher - Should have studied mathematics till Grade 12 <p>Technical prerequisites are</p> <ul style="list-style-type: none"> - A basic understanding of programming i.e., sufficient coding experience in at least one high-level language such as Python/C/C++/R/JAVA etc. - Strong grasp of mathematical concepts, specifically in the areas of probability, statistics, and linear algebra programs <p>PhD program</p> <ul style="list-style-type: none"> - Master's degree (MA, MCom, MSc, MTech, MPhil or dual BS+MS degree) or a master's equivalent program in a related field of study from a recognized university in India or abroad with at least 60% (or equivalent) score in the most recent degree program. - B.E. /B. Tech. or equivalent degree from a recognized university in India or abroad with a good academic record (CGPA/ CPI score of 7.5 or more out of 10 or equivalent) <p>Preference is given to those applicants who have qualified in at least one of the following exams: NET/ GATE/ IIT-JAM/ GRE, and/ or have demonstrated research potential through publications in recognized journals.</p> | | | | | | | | |
|-----------------|--|--|--|--------------------------|--|---------|-----------------|---|-----|--|
| 6.5 | Whether University is providing any reservation/ relaxation in admission? If yes, please provide details in the following format:- | <p>Yes, University is providing reservations in admission in accordance with the Punjab Private University Policy 2010. 15% of seats are reserved for Punjab domicile.</p> <table border="1"> <thead> <tr> <th>Category</th> <th>No. of students admitted</th> <th>% of quota provided for reservation and preparation in respect of actual enrolment</th> <th>Remarks</th> </tr> </thead> <tbody> <tr> <td>Punjab domicile</td> <td>5</td> <td>15%</td> <td>15 students from Punjab were offered admission to the program, but only 5 students accepted our offer and joined the class</td> </tr> </tbody> </table> | Category | No. of students admitted | % of quota provided for reservation and preparation in respect of actual enrolment | Remarks | Punjab domicile | 5 | 15% | 15 students from Punjab were offered admission to the program, but only 5 students accepted our offer and joined the class |
| Category | No. of students admitted | % of quota provided for reservation and preparation in respect of actual enrolment | Remarks | | | | | | | |
| Punjab domicile | 5 | 15% | 15 students from Punjab were offered admission to the program, but only 5 students accepted our offer and joined the class | | | | | | | |
| 6.6 | Whether any management quota is available for admission in the University? | There is no management quota for admission to the University. | | | | | | | | |
| 6.7 | What is the admission policy of the University with regard to NRI and overseas students? | There is no separate admission policy for NRI or overseas students for admission to the University. All admissions are made strictly as per the rules and regulations of the University and in keeping with the policy guidelines of the University Grant Commission (UGC). NRI and Overseas students must compete for admission along with others, eligibility conditions being the same for all. | | | | | | | | |



E. Fee Structure

| | | |
|-----|---|---|
| 7.1 | Present Course-wise fee structure of the University (Please provide head-wise details of total fee charged) | <p>Annual Fee Structure for the academic year 2022-23</p> <p>UG program:</p> <ul style="list-style-type: none"> - Tuition fee - INR 6,95,000 - Residence fee - INR 1,35,000 - Meal costs - INR 60,000 - Acceptance fee – INR 40,000 - Refundable Security deposit (one-time) – INR 50,000 <p>PG Diploma program:</p> <ul style="list-style-type: none"> - Tuition fee - INR 11,20,000 - Residence fee - INR 1,50,000 - Meal costs are borne on actuals by students <p>PhD program</p> <ul style="list-style-type: none"> - Admission fee (one-time) – INR 25,000 - Registration fee – INR 5,000 - Tuition fee – INR 7,00,000 |
| 7.2 | Any other fee charged by the University other than the fee displayed in the UGC website (e.g. Building Fee, Development Fee, Fee by any name, etc.) | The University is not charging any other fee which is not mentioned in the Prospectus of the University or not notified through its website. |
| 7.3 | Whether fee structure is available on the University website and in the prospectus? | Yes, the fee structure is available on the University website |
| 7.4 | Whether fee is charged by the University as per fee structure displayed in the University website and in the prospectus or some hidden charges are there? | The University is charging fees as displayed on the University website and as mentioned in its admission prospectus. There are no hidden charges being collected from the students. |
| 7.5 | Mode of Fee collection | The fee is collected through bank transfer mode |
| 7.6 | Whether University is providing any concession in fee to students? If yes, please provide details. | <p>Yes, the University is providing liberal fee concessions to its students on need-cum-merit basis. Those who apply for fee concession on considerations of economic hardship are required to apply on the prescribed form by enclosing their income proof.</p> <ul style="list-style-type: none"> - A need-based scholarship is provided to students based on their family's financial standing. Students who require such aid fill in a separate form to share details about their income and wealth. Based on this information, students are offered a scholarship that ranges anywhere from a 25% waiver on the tuition fee to a 100% waiver on the entire fee, including hostel and food. - Plaksha offers merit-based scholarships to students. These are based on their performance in the admission process and not just a particular score. The scholarship amount varies from 25% to 100% on tuition fees. |
| 7.7 | Details of the Hostel Fee including mess charges | <p>UG Program: The total annual hostel fee Residence fee – is INR 1,35,000 and the meals cost is INR 60,000.</p> <p>PG Diploma Program: The total annual hostel fee Residence fee – is INR 1,50,000 and meals cost are borne on actuals by students</p> |
| 7.8 | Any other fee | The University is not charging any other fee, except the fees mentioned on the University Website and those included in the Admission Prospectus. |
| 7.9 | Basis of Fee Structure | The unit cost of education per student is Rs 27.66 lac per annum due to a high-quality education including top faculty globally and world-class infrastructure and services. The fee charged is ~31% of the cost incurred by the University in view of the Indian cost sensibilities. While the fee is higher than other engineering institutions in India, it is significantly lower than global institutions providing a comparable quality of education. Further, a large number need-based scholarships are provided ranging from 25-100% of tuition fee, so that the cost of education is not a barrier to any meritorious student to attend Plaksha. |



| | | |
|------|---|--|
| 7.10 | Whether the University has received any complaint with regard to fee charged or fee structure? If yes please give details about the action taken. | The University has not received any complaints regarding the fees charged or the fee structure adopted by it. |
| 7.11 | Whether University is providing any scholarship to students? If yes, please provide details. | <p>UG Program</p> <p>a) Need-based scholarship The University is committed to ensuring that no deserving student is denied access to education because of their personal financial constraints. The admissions process at Plaksha is 'need-blind' which ensures that students are admitted into the University based on their performance in the application process alone. Once admitted, the Office of Financial Aid ensures that adequate financial aid is provided based on the candidate's needs. This is made possible through the generous contribution of the University's donors who strongly believe in the University's vision to make world-class education more affordable and accessible. 61 out of 92 students (66%) received need-based scholarships in the academic year 2021-22.</p> <p>b) Merit-based scholarship The university offers merit-based scholarships to students. These are based on their performance in the admission process and not just a particular score. The scholarship amount varies from 25% to 100% on tuition fees. 14 out of 92 students (~15%) received merit-based scholarships in the academic year 2021-22.</p> <p>c) Bharti scholarship Bharti Scholarship is a highly prestigious scholarship awarded to exceptional students from diverse socio-economic backgrounds to pursue full-time undergraduate studies at Plaksha. Set up by the Bharti Foundation, the aim is to help the youth to realize their potential and pursue their dreams. As part of this scholarship, the recipients are known as 'Bharti Scholars', are eligible for: (i) Student mentoring program by senior faculty and industry leaders during the first year. And (ii) participation in exchange programs with global Universities to broaden their horizon with projects, research, etc. Up to 20 students are awarded full scholarships per academic year</p> <p>PG Diploma Program</p> <p>a) Merit-cum-need based scholarship The University is committed to ensuring that no deserving student is denied access to education because of their personal financial constraints. The admissions process at Plaksha is 'need-blind' which ensures that students are admitted into the University based on their performance in the application process alone. Once admitted, the Office of Financial Aid ensures that adequate financial aid is provided based on the candidate's needs. This is made possible through the generous contribution of the University's donors who strongly believe in the University's vision to make world-class education more affordable and accessible. 48 out of 51 students (94%) received need-based scholarships in the academic year 2021-22.</p> <p>b) A Lalitha scholarship for women in STEM The 'Ayyalasomayajula Lalitha' Scholarship Fund provides financial aid to deserving women students from less privileged backgrounds pursuing full-time postgraduate programs at Plaksha. This scholarship fund is instituted and initially supported by the A.T.E. Chandra Foundation (ATECF)</p> <p>PhD. Program PhD students are supported through the either of following categories of scholarships</p> <p>a) Plaksha Doctoral Fellowships b) Govt./Semi Govt. Fellowships c) Industry Sponsorships d) International Scholarships</p> <p>Plaksha Doctoral Fellowships scholars receive a monthly stipend of INR 60,000 in their first and second years and INR 70,000 after</p> |



| | | |
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| | | completion of their second year for subsequent years. They also receive a full tuition fee waiver in addition to their fellowships. Tuition fee waiver for scholars under categories (c) and (d) is also considered on a case-to-case basis. |
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F. Faculty

| | | | | | | | | |
|--|---|-----------------|---------------------------|--------|---------------------|--------|---------------------|--------|
| 8.1 | Total no. of Sanctioned and filled up posts (Institution-wise and Department-wise) | Dept.* | Professor | | Associate Professor | | Assistant Professor | |
| | | | Sanctioned | Filled | Sanctioned | Filled | Sanctioned | Filled |
| | | Regular | 10 | 7 | 5 | 3 | 20 | 10 |
| | | Visiting | 23 (Filled Positions) | | | | | |
| | | Total | 35 (Sanctioned Positions) | | | | | |
| 8.2 | Details of teaching staff in the following format (Please provide details – Institution-wise and Department-wise) (Details to be provided in Appendix-XIII) | | | | | | | |
| *Plaksha offers interdisciplinary programs and thus does not have traditional academic departments at present. Faculty are recruited in disciplines including Computer Science and Artificial Intelligence, Robotics and Cyber-Physical Systems, Biological Systems Engineering, Design, Applied Math, Economics, Humanities and Social Sciences, and Engineering Education. | | | | | | | | |

| Dept (discipline) | Name of the Teacher | Designation | Age | Educational Qualification (whether qualified as per UGC Regulations) | Teaching experience in years | Date of appointment | Whether full time or part time | Regular or adhoc | Scale of Pay | No. of publication |
|--------------------------------|---------------------|---|-----|---|------------------------------|---------------------|--------------------------------|------------------|--------------|---|
| Humanities and Social Sciences | Dr. Aditya Malik | Dean of Academic Affairs & Professor | 63 | a) Habilitation, D.Phil. and Ph.D. University of Heidelberg, Germany. b) M.A. Deccan College Post-Graduate and Research Institute, University of Pune. c) B.A., St. Stephen's College, University of Delhi | 32 | 01-Jul-21 | Full time | Regular | | a) Book - 4 b) Edited volumes - 7 c) Chapters in books - 29 d) Conference - 3 e) Scholarly journals - 3 |
| Design | Amit Sheth | Professor of Practice | 61 | a) M Phil, IIT Bombay b) M Des - NID, Ahmedabad c) BE (Hons) - BITS, Pilani | 23 | 16-Aug-21 | Full time | Regular | | a) Book and Book chapters - 3 b) Conference - 12+ |
| Applied Mathematics | Dr. Amrik Sen | Director Undergraduate Programs & Assistant Professor | 38 | a) PhD and MS, University of Colorado & National Center for Atmospheric Research b) BTech, NIT Silchar | 11 | 01-Jul-21 | Full time | Regular | | a) Journal Papers - 7 b) Conference - 5 |
| Robotics and CPS | Dr. Amruta Behera | Assistant Professor | 34 | a) Ph.D. and M.Sc(Engg.) CeNSE, IISc, Bangalore b) B.Tech, NIT Warangal | - | 10-Jan-21 | Full time | Regular | | a) Journals - 4 b) Conferences - 13 |
| Robotics and CPS | Dr. Dhiraj Sinha | Assistant Professor | 45 | a) Ph.D., University of Cambridge b) Certificat des études Spécialisées, ENST de Bretagne Brest, France c) B.Tech., IET, Lucknow | 8 | 01-Mar-20 | Full time | Regular | | a) Book - 1 b) Journal Papers - 16 c) Conference - 3 d) Patents (published) - 2 |
| Computer Science and AI | Dr. K Gopinath | Professor | 65 | a) PhD, Stanford University b) MS, University of Wisconsin c) B.Tech IIT Madras | 31 | 02-Aug-21 | Full time | Regular | | a) Book - 1 b) Conference - 8 c) Journal - 5 |
| Economics | Dr. Kriti Khanna | Assistant Professor | 34 | a) Ph.D., University of Houston b) MPhil, Jawaharlal Nehru University c) M.A., Jawaharlal Nehru University d) BSc.(H), St. Stephen's College, Delhi University | 1 | 11-Oct-21 | Full time | Regular | | a) Conference - 1 |
| Engineering education | Dr. Manoj Kannan | Associate Dean of Student Life & Associate Professor | 43 | a) Ph.D., M.E., M.Sc. BITS Pilani | 13 | 19-Aug-21 | Full time | Regular | | a) Journal Papers - 5 b) Book chapters - 4 c) Conferences - 3 |
| Biosystems engineering | Dr. Monika Sharma | Assistant Professor | 38 | a) PhD, IIIT Hyderabad b) M.Sc. and B.Sc. Panjab University | 6 | 01-Jul-21 | Full time | Regular | | a) Publications - 27 b) Conference papers - 3 |



| | | | | | | | | | |
|-------------------------|------------------------|---------------------|----|--|----|-----------|-----------|---------|--|
| CRISPR Technologies | Dr. Navjot Kaur | Assistant Professor | 29 | a) PhD, IISc Bangalore b) B.E. Panjab University | | 1-Apr-22 | Full time | Regular | a) Journal Papers - 5 |
| Biosystems engineering | Dr. Prashanth Kumar | Assistant Professor | 33 | a) PhD, Delft University of Technology b) MBA, Business School Nederland c) M.Sc., Uppsala University d) B.Tech Anna University | - | 06-Sep-21 | Full time | Regular | a) Journal Papers - 10 |
| Engineering education | Dr. Rucha Joshi | Assistant Professor | 35 | a) Ph.D. and M.Sc., Purdue University c) B.Tech, Shivaji University | 9 | 26-Jul-21 | Full time | Regular | a) Books - 2 b) Journal Papers - 7 c) Conference - 8 d) Patents - 2 |
| n/a | Dr. Rudra Pratap | Vice Chancellor | 57 | a) PhD, Cornell University b) MS, University of Arizona c) BTech, IIT Kharagpur | 28 | 01-May-21 | Full time | Regular | a) Book - 1 b) Journal Papers - 104 c) Conference - 121 d) Patents - 17 |
| Biotechnology | Dr. Rupesh Deshmukh | Associate Professor | 43 | a) PhD, SRM b) MSc, IGAU c) BSc, MAU | | 2-Jun-22 | Full time | Regular | a) Book - 7 b) Journal Papers - 151 c) Conference - 3 d) Patents - 1 |
| Bio-engineering | Dr. Saikat Chakraborty | Professor | 47 | a) PhD, University of Houston b) M.E, IISc Bangalore c) B.E, Jadhavpur University | 16 | 2-Jun-22 | Full time | Regular | a) Journal Papers - 46 b) Conference - 36 c) Patents - 5 |
| Applied Mathematics | Dr. Sanjay Bose | Professor | 65 | a) PhD., Stony Brook University b) MS, Stony Brook University c) B.Tech, IIT Kanpur | 39 | 01-Jul-21 | Full time | Regular | a) Books - 3 b) Journal Papers - 102 c) Conference - 133 d) Patents (granted) - 5 |
| Computer Science and AI | Dr. Saumya Jetley | Assistant Professor | 32 | a) PhD, University of Oxford b) B.Eng, University of Pune | 2 | 1-Oct-21 | Full time | Regular | Papers and conference proceedings - 13 |
| Robotics and CPS | Dr. Shashank Tamaskar | Associate Professor | 36 | a) Ph.D. And M.S., Purdue University b) B.Tech, IIT Bombay | 4 | 26-Jul-21 | Full time | Regular | a) Journal Papers - 3 b) Conference - 14 c) Patents - 11 |
| Applied Mathematics | Dr. Shashikant Pawar | Assistant Professor | 43 | a) PhD, IISc Bangalore b) M.Tech, NIT Hamirpur c) B.Tech, VJTI Mumbai | 7 | 2-Jun-22 | Full time | Regular | a) Journal Papers - 6 b) Conference - 8 c) Patents - |
| Clean Energy | Dr. Vishal Garg | Professor | 49 | a) PhD, IIT Delhi b) B.E, University of Jodhpur | | 2-May-22 | Full time | Regular | a) Journal Papers - 94 b) Conference - c) Patents - 3 |

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|-----|-------------------------------------|---|
| 8.3 | Category wise No. of Teaching Staff | This information was not sought at the time of employment, hence not available. |
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| 8.4 | Details of the permanent and temporary faculty members in the following format | |
|-----|--|--|

| Particulars | Female | Male | Total |
|--|--------|------|-------|
| Total no. of permanent teachers | 5 | 16 | 21 |
| No. of teachers with Ph.D. as the highest qualification | 5 | 15 | 15 |
| No. of teachers with M.Phil as the highest qualification | 0 | 1 | 1 |
| No. of teachers with PG as the highest qualification | 0 | 0 | 0 |
| Total no. of temporary teachers | 0 | 0 | 0 |
| No. of teachers with Ph.D. as the highest qualification | 0 | 0 | 0 |
| No. of teachers with M.Phil as the highest qualification | 0 | 0 | 0 |
| No. of teachers with PG as the highest qualification | 0 | 0 | 0 |
| Total no. of part-time teachers | 0 | 0 | 0 |
| No. of teachers with Ph.D. as the highest qualification | 0 | 0 | 0 |
| No. of teachers with M.Phil as the highest qualification | 0 | 0 | 0 |
| No. of teachers with PG as the highest qualification | 0 | 0 | 0 |
| Total No. of visiting teachers | 1 | 22 | 23 |

| | | |
|-----|---|-------------------------------|
| 8.5 | Ratio of full-time teachers to part-time/ contract teachers | 1: 1.1 (based on section 8.4) |
|-----|---|-------------------------------|



| | | |
|-----|--|--|
| 8.6 | <p>Process of recruitment of faculty -Whether advertised? (pl.attach copy of the ad) -Whether selection committee was constituted as per the UGC Regulation?</p> | <p>The University has a very rigorous process in place to ensure that we recruit top-notch faculty members who can conduct impactful research, as well as passionately teach a distinctive and unique interdisciplinary curriculum.</p> <p>The process is as follows:</p> <ul style="list-style-type: none"> • Candidates submit an application package, which includes their CV, cover letter, impact statement, research statement, teaching statement, and list of references. • Shortlisting of candidates is done by relevant disciplinary experts • Shortlisted candidates are then invited to present their work at a research talk, in which they interact with Plaksha faculty, staff and student • Following this, a formal interview with a 5–6-member panel of disciplinary experts and advisors relevant to the area of the candidate is conducted. Thus far we have had 50+ senior faculty from 30+ institutions across the world who have participated as a panelists • On the recommendation of the panel, reference letters of the candidate are requested. • Post review, candidates are offered a faculty position at Plaksha. <p>Outreach and advertisements</p> <ul style="list-style-type: none"> • The University has a rolling advertisement published on its website. Shared in Appendix XIV • The University has also periodically advertised in journal job sites/magazines such as HigherEd Jobs, Institute of Electrical and Electronics Engineers (IEEE) Spectrum, Society of Women Engineers, Association for Computing Machinery, Institute for Operations Research and the Management Sciences, American Economic Association. Details shared in Appendix XIV |
| 8.7 | <p>Does the University follow self-appraisal method to evaluate teachers on teaching, research, and work satisfaction? If yes, how is the self-appraisal of teachers analysed and used? Whether:- Self Appraisal Evaluation Peer Review Students evaluationOther (specify)</p> | <p>Plaksha is in the process of developing an Annual Performance Review process which is intended to encourage faculty to reflect on the impact of their work, receive feedback and support for their professional development and career advancement, share any expectations for their growth and advancement ahead and refocus academic and professional efforts where appropriate. Faculty may also share any feedback or suggestions with the leadership.</p> <p>This process will also provide a basis for awarding annual increments and other recognition. The performance review will proportionately weigh the variations in faculty members' responsibilities and expectations. The draft process is as follows:</p> <ul style="list-style-type: none"> • Faculty will submit their Annual Performance Reflections on contribution and impact of teaching, research or creative activity, scholarships, and another institutional service for the previous year by a defined timeline. All relevant qualitative and quantitative information and evidence may be included. • These reflections will be reviewed by a Council chaired by the Vice-Chancellor and including relevant Deans and senior faculty (if applicable). • Conversations will be held with faculty thereafter on reflections and feedback for the previous academic year and common expectations and goals for faculty and the University in the following academic year. • Final feedback reports will be shared with individual faculty subsequently. • For faculty eligible for promotion and/or tenure, the promotion and tenure process will supersede the annual performance review process. <p>This process is currently being evolved and may be modified and improved over time.</p> |
| 8.8 | <p>Institution-wise and Department-wise teacher student ratio (only full-time faculty)</p> | <p>1:7</p> |



| | | |
|------|--|---|
| 8.9 | Whether the University is providing UGC Pay Scales to the Permanent Faculty? If yes, please provide the following details:- Scale of Pay with all the allowances Professor – Associate Prof.- Assistant Prof. – Mode of Payment –(Cash/Cheque) | The University pay scale is competitive in the market, and at par or above the pay scale recommended by the 7th Pay Commission of the UGC. Mode of payment – Online bank transfer |
| 8.10 | Pay / Remuneration provided to:- Part-Time Faculty – Temporary Faculty- Guest Faculty – | Part-time and temporary faculty (including Visiting and Adjunct faculty) receive a competitive stipend, and are at par or above the pay scale recommended by the 7th Pay Commission of the UGC. Guest lecturers may give lectures on a pro-bono basis or in some cases may be given an Honorarium. |
| 8.11 | Facilities for teaching staff (Please provide details about Residence, Rooms,Cubicles, Computers/Anyother) | All faculty are provided with the following: 1.Office cubicle 2.High-end laptop and tablet with high-speed Wi-Fi internet connectivity. 3.Licensed software and digital aids to facilitate world-class teaching 4. Professional Development Allowance of Rs. 6 lac for every three-year block to attend academic conferences nationally and internationally, purchase books, subscribe to journals/ publications, membership in national and international societies etc. |

G. Infrastructure

| 9.1 | Does the University have sufficient space for Land & Building? | <p>The existing infrastructure of the University is adequate to meet the present requirements and the management remains ever ready to upgrade and improve the infrastructure if required to facilitate quality teaching and research for the existing or new programmes of study.</p> <p>The campus is located on 50.12 acres of land, having an enviable blend of facilities for high performance in teaching, research, co-curricular activities, extramural activities, and sports. Details of the constructed area are as under:</p> <ul style="list-style-type: none"> - Number of academic buildings: 4 - Academic buildings operational: 2, area 6988 sqm - Number of classrooms: 7, area 2022 sqm - Number of labs: 4 - Number of Research centres (upcoming): 4 <p>Other building:</p> <ul style="list-style-type: none"> - Hostel (2 numbers), area 5433 sqm each. Hostel 1 has 222 rooms spread across 10 floors. At present, 5 floors are functional and the rest 5 will be functional in the next academic year starting August 2022. The 6th Floor of the hostel is a multipurpose lounge with meeting rooms to study, a lobby area for leisure, a pantry area with amenities like Refrigerator and microwave. - Library, area 1059 sqm - Utility, area 1801 sqm - Dining & Sports, area 2823 sqm | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---------------------------|--|--|----------|-----|----------|---------------------------|------|-----|---------------------------|------|----|---------------------------|------|----|---------------------------|------|----|---------------------------|------|----|------------------|------|----|------------------|------|----|------------------|------|----|------------------|------|----|
| 9.2 | Does the University have sufficient classrooms? | <p>Yes, the university has enough classrooms according to the requirements of its programmes of study. The details of the classrooms are as under:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 40%;">Location</th> <th style="width: 20%;">Rm#</th> <th style="width: 40%;">Capacity</th> </tr> </thead> <tbody> <tr> <td>Academic block 1 (Bharti)</td> <td>1001</td> <td>250</td> </tr> <tr> <td>Academic block 1 (Bharti)</td> <td>1002</td> <td>60</td> </tr> <tr> <td>Academic block 1 (Bharti)</td> <td>1101</td> <td>60</td> </tr> <tr> <td>Academic block 1 (Bharti)</td> <td>1102</td> <td>48</td> </tr> <tr> <td>Academic block 1 (Bharti)</td> <td>1104</td> <td>48</td> </tr> <tr> <td>Research block 1</td> <td>2101</td> <td>48</td> </tr> <tr> <td>Research block 1</td> <td>2102</td> <td>48</td> </tr> <tr> <td>Research block 1</td> <td>2201</td> <td>75</td> </tr> <tr> <td>Research block 1</td> <td>2202</td> <td>75</td> </tr> </tbody> </table> | Location | Rm# | Capacity | Academic block 1 (Bharti) | 1001 | 250 | Academic block 1 (Bharti) | 1002 | 60 | Academic block 1 (Bharti) | 1101 | 60 | Academic block 1 (Bharti) | 1102 | 48 | Academic block 1 (Bharti) | 1104 | 48 | Research block 1 | 2101 | 48 | Research block 1 | 2102 | 48 | Research block 1 | 2201 | 75 | Research block 1 | 2202 | 75 |
| Location | Rm# | Capacity | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Academic block 1 (Bharti) | 1001 | 250 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Academic block 1 (Bharti) | 1002 | 60 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Academic block 1 (Bharti) | 1101 | 60 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Academic block 1 (Bharti) | 1102 | 48 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Academic block 1 (Bharti) | 1104 | 48 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Research block 1 | 2101 | 48 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Research block 1 | 2102 | 48 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Research block 1 | 2201 | 75 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Research block 1 | 2202 | 75 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |



| 9.3 | Laboratories & Equipment (Details to be provided in Appendix-XV and Appendix-XVI) | The University has the following well-equipped laboratories with all the required equipment's for teaching and research: <ul style="list-style-type: none"> - Makerspace - Computer Lab - Physical world lab (Physics lab) - Natures' machine lab (Bio lab) The detail of the equipment is provided in Appendix XVI | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|----------------------------------|--|--|------------|---------------|------------------|-----|------------|-----|------------|-----|-------------|-----|----------|----|---------|-----|---------|-----|---------|----|------------|-----|------------|-----|------------|-----|-----------|-----|---------------------------|----|--------------------|-----|----------------------|-----|---------------|----|--------|-----|----------------------------------|-----|--------------|-------------|
| a) | Item Description (make and model) | Please refer to Appendix XVI | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| b) | Location (Department) | Please refer to Appendix XVI | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| c) | Value (Rs.) | Please refer to Appendix XVI | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| d) | Present Condition | Please refer to Appendix XVI | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| e) | Date of Purchase | Please refer to Appendix XVI | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9.4 | Library | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| a) | Total Space (all Kinds) | The University library is a rich learning resource center which collectively supports teaching, research, and extension programmes of its various Schools. <ul style="list-style-type: none"> - Ground floor – 899.691SQM - Mezzanine Floor – 159.952 SQM - Seating capacity – 252 persons - Total area 1059.643 SQM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| b) | Computer / Communication facilities | There is a separate Digital Section in the Library where 5 computers with internet and printing facility are available for browsing and use by the students and faculty <ul style="list-style-type: none"> - 5 computers for the digital library section - 1 computer for the circulation counter - 1 photostat & scanning machine - 24X7 Wi-Fi facility | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| c) | Total no. of Ref. Books (Each Department) | The total number of books available books are 3028 <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Discipline</th> <th>Num. of books</th> </tr> </thead> <tbody> <tr><td>Computer Science</td><td>352</td></tr> <tr><td>Electrical</td><td>180</td></tr> <tr><td>Mechanical</td><td>113</td></tr> <tr><td>Mathematics</td><td>168</td></tr> <tr><td>Robotics</td><td>50</td></tr> <tr><td>Physics</td><td>181</td></tr> <tr><td>Biology</td><td>106</td></tr> <tr><td>Science</td><td>66</td></tr> <tr><td>Statistics</td><td>106</td></tr> <tr><td>Management</td><td>162</td></tr> <tr><td>Humanities</td><td>166</td></tr> <tr><td>Economics</td><td>206</td></tr> <tr><td>Networks & cyber security</td><td>61</td></tr> <tr><td>Behavioral Science</td><td>129</td></tr> <tr><td>Nanotech & materials</td><td>190</td></tr> <tr><td>Earth Science</td><td>16</td></tr> <tr><td>Sports</td><td>169</td></tr> <tr><td>Fiction, non-fiction, dictionary</td><td>607</td></tr> <tr><td>TOTAL</td><td>3028</td></tr> </tbody> </table> | Discipline | Num. of books | Computer Science | 352 | Electrical | 180 | Mechanical | 113 | Mathematics | 168 | Robotics | 50 | Physics | 181 | Biology | 106 | Science | 66 | Statistics | 106 | Management | 162 | Humanities | 166 | Economics | 206 | Networks & cyber security | 61 | Behavioral Science | 129 | Nanotech & materials | 190 | Earth Science | 16 | Sports | 169 | Fiction, non-fiction, dictionary | 607 | TOTAL | 3028 |
| Discipline | Num. of books | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Computer Science | 352 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Electrical | 180 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Mechanical | 113 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Mathematics | 168 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Robotics | 50 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Physics | 181 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Biology | 106 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Science | 66 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Statistics | 106 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Management | 162 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Humanities | 166 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Economics | 206 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Networks & cyber security | 61 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Behavioral Science | 129 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Nanotech & materials | 190 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Earth Science | 16 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sports | 169 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Fiction, non-fiction, dictionary | 607 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TOTAL | 3028 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| d) | All research journals subscribed on a regular basis | The total number of research journals subscribed are 219 <ul style="list-style-type: none"> - ACM DL – 13 journals - IEEE publisher – 206 journals Total 219 journals | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9.5 | Sports Facilities | Details have been provided in Annexure XVII | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| a) | Open Play Ground(s) for outdoor sports (Athletics, Football, Hockey, Cricket, etc.) | Yes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| b) | Track for Athletics | Jogging track along the football field | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| c) | Basketball courts | One indoor and one outdoor basketball court measuring 28m x 18.34m each | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| d) | Squash / Tennis Courts | 3 squash courts measuring 6.4m x 9.82 m and 1 lawn tennis court measuring 44.468m x 18.270m | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |



| | | |
|-----|---|---|
| e) | Swimming Pool (Size) | Swimming pool has been planned in the Phase 2 |
| f) | Indoor Sports Facilities including Gymnasium | Gymnasium with modern fitness equipment (upcoming), yoga, and music room |
| g) | Any other | Volleyball court measuring 24.25m x 18.34m, Open air gym, 2 table tennis court 3 Badminton court (upcoming) 1 Basketball court 2 Billiard/ pool table (upcoming) 1 Frisbee field 1 Foosball table Facility for Indoor games such as chess, carom, etc |
| 9.6 | Does the University has provision for residential Accommodation including hostels (boys & girls separately) | Yes, the University has provision for residential accommodation both for Boys and Girls. |

H. Financial Viability

| | | |
|------|--|---|
| 10.1 | Details of the Corpus Fund created by the University (Documentary evidence to be given) | As per Punjab Private Universities Policy 2010, it is mandatory to create a Corpus Fund of INR. 5.00 crore. The same has been created by the University in the form of an FDR which has been deposited in original with the State Government. The particular of the FDR are as given below: - Amount - INR 5 Crore - FDR No. - #00418 - Date 07 May 2021 - Period - 60 months A photocopy of the said FDR is enclosed as Annexure - XXII |
| 10.2 | Financial position of the University (please provide audited income and expenditure statement for the last 3 years) | The university came into existence on 20 August 2021, thus audited income and expenditure statement for 3 years is evolving. |
| 10.3 | Source of finance and quantum of funds available for running the University (for last audited year) Fees - Donations- Loan - Interest- Any other (pl. Specify)- | The university came into existence on 20 August 2021, and thus audited income statement is evolving. The revenues earned from 20 August 2021 to 31 March, 2022 are: - Fees - INR 50,392,116 - Donations - N.A - Loan - N.A - Interest - N.A - Any other (pl. Specify) - N.A |
| 10.4 | What is the University's 'unit cost' of education? (Unit cost = total annual expenditure (budget accruals) divided by the number of students enrolled) Unit cost calculated excluding the salary component may also be given | Based on the Operational budget for FY 2021-22: Total Operations Budget for FY 2021-22 - INR 40.39 Cr. No. of Students - 144 Unit Cost of education - INR 27.66 Lakh |



I. Governance System

11. Organization, Governance and Management

| 11.1 | Composition of the statutory bodies of the University (please give names, profession & full postal address of the members and date of constitution):- Governing Board Executive Council Board of Management Academic Council Finance Committee Board of Studies Others (Details to be provided in Appendix-XVIII) | The present composition of the Statutory Bodies and other details about the members are as given in <u>Appendix-XVIII</u> | | | | | | | | | | | | | | | |
|---------|---|---|---------|-------------|--------------|---|----------------|---------------------------|---|---------------------|------------------------------|---|------------------|-----------------------------|---|-------------------|--------------------------------|
| 11.2 | Dates of the meetings of the above bodies held during the last 2 years (Enclose attested copy of the minutes of the meetings) | Plaksha University, Punjab was established on 20 August 2021, and as on date following meetings of Statutory Bodies were held <table border="1"><thead><tr><th>Sr. No.</th><th>Description</th><th>Meeting Date</th></tr></thead><tbody><tr><td>1</td><td>Governing Body</td><td>3rd May, 2022</td></tr><tr><td>2</td><td>Board of Management</td><td>20th April, 2022</td></tr><tr><td>3</td><td>Academic Council</td><td>13th April 2022</td></tr><tr><td>4</td><td>Finance Committee</td><td>13th January, 2022</td></tr></tbody></table> The minutes of these meetings are in Appendix XXIII A to D | Sr. No. | Description | Meeting Date | 1 | Governing Body | 3 rd May, 2022 | 2 | Board of Management | 20 th April, 2022 | 3 | Academic Council | 13 th April 2022 | 4 | Finance Committee | 13 th January, 2022 |
| Sr. No. | Description | Meeting Date | | | | | | | | | | | | | | | |
| 1 | Governing Body | 3 rd May, 2022 | | | | | | | | | | | | | | | |
| 2 | Board of Management | 20 th April, 2022 | | | | | | | | | | | | | | | |
| 3 | Academic Council | 13 th April 2022 | | | | | | | | | | | | | | | |
| 4 | Finance Committee | 13 th January, 2022 | | | | | | | | | | | | | | | |
| 11.3 | What percentage of the members of the Boards of Studies, or such other academic committees, are external? Enclose the guidelines for BOS or such other Committees. | There is no fixed percentage prescribed for external members in Boards of Studies or other academic committees. At present Percentage of external members ranges from 15% to 40% across academic committees. | | | | | | | | | | | | | | | |
| 11.4 | Are there other strategies to review academic programmes besides the academic council? If yes, give details about what, when and how often are such reviews are made? | The Curriculum Advisory Board comprising faculty and external disciplinary experts were constituted to draft the curriculum for each major before the final approval by the Academic Council. The Composition of the Curriculum Advisory Board for each major may be seen in <u>Appendix XVIII</u> These groups will also be invited to meet every year to review the curriculum, based on the latest research, feedback from students and industry, and synergistic developments with other majors. In addition to this, regular feedback and inputs are taken from students and faculty across programmes, at the end of every semester. Based on them, crucial adjustments are made in the pedagogy and curriculum structure for the subsequent semesters. Further, the University schedules regular workshops and talks with experts in India and abroad, to discuss the latest advances in curriculum and pedagogy. The last workshop was conducted in May 2021, in which global thought leaders such as Dr. Sanjay Sarma (Vice President of Open Learning, MIT), Dr. Rick Miller (Founding President, Olin College of Engineering), Dr. Mathew Ohland (Professor and Associate Head of Engineering Education, Purdue University), Dr. Milind Sohni (Professor, IIT Bombay) and many more shared best practices related to pedagogical innovations. Many of these are already being implemented in classes. | | | | | | | | | | | | | | | |

J. Research Profile

| 12.1 | Faculty-wise and Department-wise information to be provided in respect of the following:- <ul style="list-style-type: none"> Student Teacher Ratio Class Rooms Teaching labs | <ul style="list-style-type: none"> Student-teacher ratio - 1:9 Classrooms <p>The university has enough classrooms according to the requirements of its programmes of study. The details of the classrooms is as under:</p> <table border="1"> <thead> <tr> <th>Location</th> <th>Rm#</th> <th>Capacity</th> </tr> </thead> <tbody> <tr> <td>Academic block 1 (Bharti)</td> <td>1001</td> <td>250</td> </tr> </tbody> </table> | Location | Rm# | Capacity | Academic block 1 (Bharti) | 1001 | 250 |
|---------------------------|--|---|----------|-----|----------|---------------------------|------|-----|
| Location | Rm# | Capacity | | | | | | |
| Academic block 1 (Bharti) | 1001 | 250 | | | | | | |



- Research labs (Major Equipments)
- Research Scholars (M.Tech, Ph.D., Post Doctoral Scholars)
- Publications in last 3 years (Year-wise list)
- No. of Books Published
- Patents
- Transfer of Technology
- Inter-departmental Research (Inter-disciplinary)
- Consultancy
- Externally funded Research Projects
- Educational Programmes Arranged

| | | |
|---------------------------|------|----|
| Academic block 1 (Bharti) | 1101 | 60 |
| Academic block 1 (Bharti) | 1102 | 48 |
| Academic block 1 (Bharti) | 1104 | 48 |
| Research block 1 | 2101 | 48 |
| Research block 1 | 2102 | 48 |
| Research block 1 | 2201 | 75 |
| Research block 1 | 2202 | 75 |

Teaching Labs

The University has the following well-equipped laboratories with all the required equipment's for teaching:

Makerspace: State-of-the-art laboratory infrastructure for digital fabrication, 3D Printing, prototyping and other engineering solutions. The maker space will contain space and equipment for creating wooden, metal, and plastic prototypes along with space for robotic and electronics projects.

Computer Lab has been set up and high-performance computing resources are being added

Physical World lab (Physics lab) has been set up

Natural World lab (Bio lab): State-of-the-art infrastructure to support research on biological systems, biomolecules, point-of-care diagnostic technologies, microbiology and genetic

Innovation Lab and Grand Challenges (ILGC): Dedicated infrastructure is operational to facilitate ideation/ conceptualization and proof-of-concept projects. The emphasis is on creating innovation and an entrepreneurial mindset to co-create solutions.

The detail of equipment's is provided in Appendix XVI

Research Labs

Plaksha plans to set up state-of-the-art research laboratories over time including an IoT and Sensors lab, CRISPR-Cas lab, Microclimate lab, Human digital twin lab etc.

Further, research centres/ initiatives are being planned over the coming years in areas such as:

- Digital health, personalized medicine and biomanufacturing
- Water security (Effective, efficient, and comprehensive solutions for water security)
- Future Mobility
- Digital agriculture
- Data Science Institute
- Center for Clean Energy

•Research Scholars

Details regarding research scholars are given below:

PhD.: 1

Plaksha Research Fellow (PRF): 12

Discipline wise distribution of Fellows is

| Discipline | Fellows |
|-------------------------|-------------|
| Computational Thinking | 1 |
| Engineering Mathematics | 2 + 1 (PhD) |
| Design Thinking | 2 |
| ILGC | 1 |
| Art of Thinking | 1 |
| Natures Machine | 1 |
| Micro-economics | 1 |
| Pedagogy | 1 |
| Clean Energy | 1 |
| Water security | 1 |
| TOTAL | 12 |

•Publications in last 3 years, books and patents

The university came into existence on 20 August 2021 thus this track record is evolving.



| | | |
|--|--|--|
| | | <p>•Transfer of Technology Plaksha is committed to enabling impactful research translating into novel technologies and products. Multiple avenues are being set up to facilitate translational research and transfer of technologies.</p> <p>1. Office of Research The Office of Research at Plaksha will work synergistically with the faculty/student researchers and “The Centre for Entrepreneurship” to drive the transfer of technology while facilitating product and regulatory development.</p> <p>2. Centre for Entrepreneurship The Centre for Entrepreneurship is strategically positioned to offer support, handhold, guide and mentor start-ups and facilitate technology transfers. The Centre closely works with all stakeholders to ensure meaningful translation of ideas into products and services.</p> <p>•Inter-departmental Research (Inter-disciplinary) Plaksha has interdisciplinary programs, and the course curriculum is designed accordingly. The faculty members offer deep domain capabilities cutting across disciplines, including Computer Science and AI, Cyber-Physical Systems, Robotics, Bioengineering, Computational Biology, Economics, Design, Humanities and Social Sciences.</p> <p>Inter-disciplinary research is the core of Plaksha's vision reflected in the conceptualization of “Research Centres” on grand challenges and not specific disciplines. The research projects are interdisciplinary requiring a diverse range of expertise to find solutions that are impactful with societal benefits.</p> <p>•Consultancy The university came into existence on 20 August 2021 thus this track record is evolving.</p> <p>Externally funded research projects The University is actively securing external funding for its research projects. Below is a representative list of the externally funded research projects that are being applied for:</p> <p>1. Covid pandemic management based on real-time detection of airborne viral load in Hospitals 2. Construction of a Reduced Model for Investigating Dispersion of Pollutants by Atmospheric Wave Turbulence in the Atmospheric Boundary Layer 3. Designing highly specific Immunotherapeutic through structure-based cytokine engineering: A combined in silico and deep learning approach 4. Open Wind Tunnel: An experimental facility to study air pollution dispersion, the <i>project under evaluation</i></p> <p>•Educational Programmes Arranged Plaksha offers the following education programs</p> <p>1. Under Graduate (UG) Program 2. PhD. Program 3. Technology Leaders Program 4. Young Tech Scholars Program for High School students</p> |
|--|--|--|

K. Misc.

13. Details of Non-Teaching Staff

| 13.1 | Details of Non-Teaching Staff | Details of Non-Teaching Staff showing their names, designation, age, qualification, the scale of pay, date of appointment, and whether trained or not, are shown in <u>Appendix - XIX</u> . | | | | | | | | |
|-------------|---|--|-------------|--------|------|-------|-------------|----|----|----|
| 13.2 | Summary of Non-Teaching staff | <table border="1"> <thead> <tr> <th>Particulars</th> <th>Female</th> <th>Male</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td>Grand total</td> <td>30</td> <td>45</td> <td>75</td> </tr> </tbody> </table> | Particulars | Female | Male | Total | Grand total | 30 | 45 | 75 |
| Particulars | Female | Male | Total | | | | | | | |
| Grand total | 30 | 45 | 75 | | | | | | | |
| 13.3 | No. of non-teaching staff category | This information was not sought at the time of employment, hence not available. | | | | | | | | |
| 13.4 | Ratio of Non-teaching staff to students | 1:1.9 | | | | | | | | |



| | | |
|------|--|-------|
| 13.5 | Ratio of Non-teaching staff to faculty | 1:0.3 |
|------|--|-------|

14. Academic Results

| | | |
|------|---|---|
| 14.1 | Faculty-wise and course-wise academic results of the past 3 years | The university came into existence on 20 August 2021 thus this is evolving. |
|------|---|---|

15. Accreditation

| | | |
|------|---|--|
| 15.1 | Whether Accredited by NAAC? If yes please provide the following details: | The process of NAAC accreditation is proposed to be initiated in due course. |
| 15.2 | Whether courses are accredited by NBA? If yes, please provide course-wise details | The process of NAAC accreditation is proposed to be initiated in due course. |
| 15.3 | Other Accreditations, if any | N. A |

16. Strength and Weaknesses of the University

| | | |
|------|-----------------------------|--|
| 16.1 | Strengths of the University | <p>The strengths of the University are as follows:</p> <ul style="list-style-type: none"> High-quality academic leadership and faculty The University is led by a very distinguished academician, Dr. Rudra Pratap, as the founding Vice-Chancellor. Dr. Pratap is the former Deputy Director of IISc Bangalore, Professor and founding Chairperson of the Center for Nano Science and Engineering (CeNSE). Our team of high calibre faculty members excel in both teaching and research and have prior education and experience at institutions such as MIT, Stanford University, University of Oxford, Cornell University, University of Cambridge, Purdue University, NTU Singapore, IITs, IISc, and more. Further, the academic programs are guided by a highly eminent Academic Advisory Board, Academic Council and Board of Studies. Strong industry linkages The University was founded by a global founding group of 80+ industry leaders, which helps promote the potential for industry-academia partnerships, entrepreneurial opportunities, and a wide-spanning global network in the years to come. Distinctive academic programs All academic programs at Plaksha offer unique experiences that not only foster academic and intellectual growth for students, but a holistic and all-round development as well. While core engineering forms the foundation of these programs, all of them are interwoven with elements of liberal arts, leadership, entrepreneurship, and social service, in a manner where project and real-life-based learning are encouraged. The pedagogical innovations and design of curriculum and program structure further distinguish Plaksha's academic programs as one of the most unique ones in India. International partnerships and rich local ecosystem Plaksha has built strong partnerships with leading institutions such as UC Berkeley, Purdue University, SRI International, IIT Kanpur, and PGIMER. In the years to come, these will help foster joint research projects & academic programs; exchange of faculty, students & postdocs; curricular development and other forms of synergistic cooperation between institutions. <p>Additionally, with 20+ academic & research institutions in proximity, Plaksha has the unique opportunity to collaborate with these institutions to create impactful research and solutions for the region, country and the world.</p> <ul style="list-style-type: none"> Diverse & exceptional students We have an exceptional, diverse, and well-rounded student community at Plaksha. The founding undergraduate cohort of 92 students come from 46 cities across 20 states & UTs, with women comprising 32% of the student body. |
|------|-----------------------------|--|



| | | |
|------|------------------------------|--|
| | | <p>The current TLP cohort has 51 students, who come from 18 States/UTs, with 25% women students, and 69% students coming with previous work experience.</p> <ul style="list-style-type: none"> • High-quality infrastructure & labs <p>The Plaksha campus is designed by New York-based architect Aaron Schwarz (founder of Plan A) as a 21st-century campus. The Makerspace, Physical World Lab, and Nature's Machines Lab are all exemplary spaces that encourage students to learn by doing, bringing in a fresh way of thinking towards education and making students ready to face the real world.</p> |
| 16.2 | Weaknesses of the University | <p>Plaksha needs to build further on the following areas in the coming years:</p> <ul style="list-style-type: none"> • Continuing to build the brand <p>Plaksha is a new institution, and a lot of high-quality technology institutions already exist in India. Plaksha already has a distinctive positioning, but it will take some years to build a top-quality brand comparable to the best in the world.</p> <ul style="list-style-type: none"> • Scale-up of recruitment of top-notch faculty <p>Plaksha has very distinctive interdisciplinary academic programs and a unique research vision focused on impact. It is not easy to find the right faculty with top credentials who are in these interdisciplinary areas and aligned to the mission. The current faculty recruited are of very high quality but scaling up the faculty body will need to be gradual to ensure that we maintain a high bar on excellence and alignment to the mission.</p> |

Certificate

This is to certify that all the information provided above is true to the best of my knowledge and belief. The University will adhere to the rules, regulations and guidelines of the UGC, Central Government and relevant Statutory Council(s) and abide by all the provisions under the UGC Regulation.

The above information is also posted on the website of the University www.plaksha.edu.in



Signed and Sealed by the Head of the Institution



Appendix Index

| S No | Appendix | Description | UGC Proforma S.No. | Page No |
|------|--------------|--|--------------------|---------|
| 1 | I | Composition of society/trust | 1.6 | 30-31 |
| 2 | II | Information about the members of the Society/Trust | 1.7 | 32 |
| 3 | III | Information about promoting Society/Trust in promoting/ running any other University/ Educational Institution | 1.8 | 33 |
| 4 | IV | Information about Involvement of promoting society/trust involved in promoting/running activities other than education | 1.9 | 34 |
| 5 | V | Information about the off-campus centre(s) | 2.4 | 35 |
| 6 | VI | Information about off-shore campus | 2.5 | 36 |
| 7 | VII | Information about Courses run under distance mode and study centre (s) | 2.7 | 37 |
| 8 | VIII | Information about programmes permitted to be offered by Gazette Notification of the State Government | 3.1 | 38 |
| 9 | IX | Information about the programmes now offered | 3.2 | 39 |
| 10 | X | Information about the approval of courses by concerned statutory council(s) | 3.3 | 40 |
| 11 | XI | Information about the courses run which are not specified by UGC Act | 3.6 | 41 |
| 12 | XII | Information about complaints received under grievance redressal mechanism | 4.9 | 42 |
| 13 | XIII | Details of teaching staff | 8.2 | 43-187 |
| 14 | XIV | Information about recruitment of faculty & copy of advertisement | 8.6 | 188-191 |
| 15 | XV & XVI | Information about library, laboratories & equipment | 9.3 | 192-194 |
| 16 | XVII | Sports Infrastructure | 9.5 | 195 |
| 17 | XVIII | Information about composition of the statutory bodies of the University | 5.1 & 11.1 | 196-200 |
| 18 | XIX | Details of non-teaching staff | | 201-202 |
| 19 | XX A & B | Copy of MOA & AOA | 1.5 | 203-232 |
| 20 | XXI A to C | Copy of Act & Notification | 1.10 | 233-297 |
| 21 | XXII | Details of the Corpus Funds created by the University | 10.1 | 298 |
| 22 | XXIII A to D | Copy of minutes of the meeting of statutory bodies | 5.3 & 11.2 | 299-321 |

(Handwritten Signature)



University Grants Commission
Appendix - I

Composition of the Society/Trust

Reimagining Higher Education Foundation (Section 8 Company)

List of Directors:

| S. No. | Name | Address | Occupation | Designation in the Society /Trust |
|--------|----------------------|--|---|-----------------------------------|
| 1 | Ambarish Raghuvanshi | E 112, Malcha Marg, B2 stilt area basement lift, New Delhi - 110001 | Former CFO InfoEdge Ltd. | Director |
| 2 | Mohit Thukral | #33, Silver Oaks Avenue, DLF City Phase 1, Gurgaon - 122002 | Managing & Managing Partner, Vivtera | Director |
| 3 | Ashish Gupta | Flat No. 14/903, Heritage City, MG road, DLF Phase II, Chakarpur (74) , DLF QV, Gurgaon , Haryana - 122002 | Founder & CEO, Benori Ventures | Director |
| 4 | Neeraj Aggarwal | A1-102, World Spa East, Sector30/41, Gurgaon -122001 | Chairman - Asia Pacific, Boston Consulting Group | Director |

Other members:

| S. No. | Name | Address | Occupation | Designation in the Society /Trust |
|--------|----------------------|---|--|-----------------------------------|
| 1 | Aakash Chaudhry | B-8, 3rd Floor, Vasant Marg, Vasant Vihar, New Delhi 110057 | Co-Promoter & CEO, Aakash Educational Services Pvt. Ltd. | Member |
| 2 | Ajay Arora | 61, Amore, Road No. 12, Jvpd Scheme, Near Lotus Eye Hospital, Juhu, Mumbai 400049 | MD, D' Decor Home Fabrics Pvt. Ltd. | Member |
| 3 | CP Gurnani | A63, Sector 17-A, Noida 301201 | MD and CEO, Tech Mahindra | Member |
| 4 | Dalip Pathak | 26 Academy Gardens, Duchess of Bedfords Walk Kensington, London W8 7QQ United Kingdom | Special Limited Partner, Warburg Pincus LLC | Member |
| 5 | Hitesh Oberoi | B-49, SECTOR-44, NOIDA 201301, U.P. | Co-Founder and CEO, Info Edge Limited (naukri.com) | Member |
| 6 | Jai Rajpal | 04-11 Grange Residences, 95 Grange road Singapore 249616 | Founder and CEO, Crescent Asset Management Asia Pte. Ltd. | Member |
| 7 | Manas Fuloria | 1601 Tower -3, The Palms, South City 1 Gurgaon 122001 Haryana | Co-founder and CEO, Nagarro | Member |
| 8 | Mukul Agarwal | Beaumode, C 13 th Floor, Prabhadevi, Opposite Tata motors Mumbai | Chairman, Param Capital Research Pvt. Ltd. | Member |
| 9 | Niten Malhan | 2705, The Imperial, Tardeo, Mumbai-400034 | Founder & Managing Partner, New Mark Advisors LLP | Member |
| 10 | Pramod Bhasin | F-35, Radhey Mohan Drive Gadaipur , New Delhi- 110030 | Chairman, Clix Capital | Member |
| 11 | Rakesh Jaggi | 13915, Hampton Cove Drive Houston TX 77077 USA | Sr. VP Sales & Commercial, Schlumberger Ltd. | Member |
| 12 | Saurabh Mittal | 9 Ardmore Park, #1603, Singapore 259955 | Chairman, Mission Holdings | Member |
| 13 | Srikanth Velamakanni | 3701, Tower-C, Oberoi Exquisite, Oberoi Garden City, Goregaon East, Mumbai | Executive Vice Chairman and Group CEO, Fractal Analytics | Member |
| 14 | Sumant Kathpalia | | CEO, IndusInd Bank | Member |
| 15 | Sumita Ambasta | 12 Cove Grove, Sentosa Cove, Singapore 098093 | Founder and Executive Director, | Member |



| | | | | |
|----|------------------|--|---|--------|
| | | | Flowering Tree Management Pte. Ltd. | |
| 16 | Sunny Gupta | 11196, Champagne point road NE Kirkland, WA 98034 | Co-founder, President and CEO, Apptio | Member |
| 17 | Sunny Singh | 1756 114th Ave SE, Bellevue, WA 98004. | Partner, RoundGlass | Member |
| 18 | Vikrant Bhargava | Palatium House, 1 North End Way, London, NW3 7ET, United Kingdom | Managing Partner, Veddis | Member |
| 19 | Vineet Nayar | 5-A, Old friends colony (west) Mathura road, New delhi- 110065 | Former Executive Vice-Chairman, Tech Mahindra | Member |



University Grants Commission
Appendix - II

Information about Members of the Society/Trust

Requisite information about Directors of the Society/ Trust is provided below:

| S.No. | Name Of the Member | Address | Name of the Society/ Trust | Designation In the Society/Trust |
|-------|----------------------|--|---|----------------------------------|
| 1 | Ambarish Raghuvanshi | E 112, Malcha Marg, B2 Stilt Area Basement Lift, New Delhi - 110001 | 99 Algorithms Private Limited | Director |
| | | | Styledotme Fashion and Lifestyle Private Limited | Director |
| 2 | Mohit Thukral | #33, Silver Oaks Avenue, DLF City Phase 1, Gurgaon - 122002 | Vivtera Global Business Services LLP | Designated Partner |
| 3 | Ashish Gupta | Flat No. 14/903, Heritage City, Mg Road, Dlf Phase li, Chakarpur (74), DLF Qv, Gurgaon, Haryana - 122002 | International Foundation for Research And Education | Director |
| | | | Benori Kpo Private Limited | Director |
| | | | Benori Ventures LLP | Designated Partner |
| 5 | Neeraj Aggarwal | A1-102, World Spa East, Sector 30/41, Gurgaon - 122001 | The Boston Consulting Group (India) Private Limited | Director |



**University Grants Commission
Appendix - III**

Information about promoting Society/Trust - other educational institutions

| S.No. | Name of the University/ Educational Institution | Activities |
|-------|---|------------|
| | | |

Not applicable



**University Grants Commission
Appendix - IV**

Information about promoting Society/Trust - Other activities

| S.No. | Name of the Organization | Activities |
|-------|--------------------------|------------|
| | | |

Not applicable



University Grants Commission
Appendix - V

Information about off-campus centre(s)

| S.No. | Address of the Off-campus centre | Courses Run |
|-------|----------------------------------|-------------|
| | | |

Not applicable



University Grants Commission
Appendix - VI

Information about off-Shore campus centre(s)

| S.No. | Address of the Off-Shore campus centre | Courses Run |
|-------|--|-------------|
| | | |

Not applicable



University Grants Commission
Appendix - VII

Information about Courses run under distance mode and study centre(s)

| S.No. | Address of the Study centre | Courses Run | No. of students enrolled |
|-------|-----------------------------|-------------|--------------------------|
| | | | |

Not applicable



University Grants Commission
Appendix - VIII

Information about the programmes permitted to be offered by the Gazette Notification of the State Government

| S.No. | Programme | Sanctioned Intake | Actual enrolment |
|-------|--------------------|--|------------------|
| 1 | UG | 120 | 92 |
| 2 | PG | 60 | 51 |
| 3 | Diploma | Not yet started, in the planning stage | N.A |
| 4 | PG Diploma | Not yet started, in the planning stage | N.A |
| 5 | Certificate Course | Not yet started, in the planning stage | N.A |
| 6 | M.Phil | Not yet started, in the planning stage | N.A |
| 7 | Ph.D. | 10 | 1 |



University Grants Commission
Appendix - IX

Information about the programmes now offered

| S.No. | Programme | Sanctioned Intake | Actual enrolment |
|-------|-----------|-------------------|------------------|
| 1 | UG | 120 | 92 |
| 2 | PG | 60 | 51 |
| 3 | Ph.D. | 10 | 1 |



University Grants Commission
Appendix - X

Information about the approval of the courses by the concerned statutory council(s)

| S.No. | Course | Name of the Statutory Council | Whether approval has been taken |
|-------|--------|-------------------------------|---------------------------------|
| | | | |

Not applicable



University Grants Commission
Appendix - XI

Information about the courses run which are not specified by the UGC

| S.No. | Course | Date of starting | Whether applied to UGC for specification |
|-------|--------|------------------|--|
| | | | |

Not applicable



University Grants Commission
Appendix - XII

Information about the complaints received under Grievance Redressal Mechanism

| S.No. | Name of the complainant | Complaint against | Date of complaint | Action taken by the University |
|-------|-------------------------|-------------------|-------------------|--------------------------------|
| | | | | |

No complaints received.

Annexure XII is not applicable

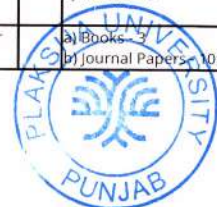


University Grants Commission

Appendix – XIII

Details of Teaching Staff and their CV's

| Dept (discipline) | Name of the Teacher | Designation | Age | Educational Qualification (whether qualified as per UGC Regulations) | Teaching experience in years | Date of appointment | Whether full time or part time | Regular or adhoc | Scale of Pay | No. of publication |
|--------------------------------|------------------------|---|-----|---|------------------------------|---------------------|--------------------------------|------------------|--------------|---|
| Humanities and Social Sciences | Dr. Aditya Malik | Dean of Academic Affairs & Professor | 63 | a) Habilitation, D.Phil. and Ph.D. University of Heidelberg, Germany. b) M.A. Deccan College Post-Graduate and Research Institute, University of Pune. c) B.A., St. Stephen's College, University of Delhi | 32 | 01-Jul-21 | Full time | Regular | | a) Book - 4 b) Edited volumes - 7 c) Chapters in books - 29 d) Conference - 3 e) Scholarly journals - 3 |
| Design | Amit Sheth | Professor of Practice | 61 | a) M Phil, IIT Bombay b) M Des - NID, Ahmedabad c) BE (Hons) - BITS, Pilani | 23 | 16-Aug-21 | Full time | Regular | | a) Book and Book chapters - 3 b) Conference - 12+ |
| Applied Mathematics | Dr. Amrik Sen | Director Undergraduate Programs & Assistant Professor | 38 | a) PhD and MS, University of Colorado & National Center for Atmospheric Research b) BTech, NIT Silchar | 11 | 01-Jul-21 | Full time | Regular | | a) Journal Papers - 7 b) Conference - 5 |
| Robotics and CPS | Dr. Amruta Behera | Assistant Professor | 34 | a) Ph.D. and M.Sc(Engg.) CeNSE, IISc, Bangalore b) B.Tech, NIT Warangal | - | 10-Jan-21 | Full time | Regular | | a) Journals - 4 b) Conferences - 13 |
| Robotics and CPS | Dr. Dhiraj Sinha | Assistant Professor | 45 | a) Ph.D., University of Cambridge b) Certificat des études Spécialisées, ENST de Bretagne Brest, France c) B.Tech., IET, Lucknow | 8 | 01-Mar-20 | Full time | Regular | | a) Book - 1 b) Journal Papers - 16 c) Conference - 3 d) Patents (published) - 2 |
| Computer Science and AI | Dr. K Gopinath | Professor | 65 | a) PhD, Stanford University b) MS, University of Wisconsin c) B.Tech IIT Madras | 31 | 02-Aug-21 | Full time | Regular | | a) Book - 1 b) Conference - 8 c) Journal - 5 |
| Economics | Dr. Kriti Khanna | Assistant Professor | 34 | a) Ph.D., University of Houston b) MPhil, Jawaharlal Nehru University c) M.A., Jawaharlal Nehru University d) BSc.(H), St. Stephen's College, Delhi University | 1 | 11-Oct-21 | Full time | Regular | | a) Conference - 1 |
| Engineering education | Dr. Manoj Kannan | Associate Dean of Student Life & Associate Professor | 43 | a) Ph.D., M.E., M.Sc. BITS Pilani | 13 | 19-Aug-21 | Full time | Regular | | a) Journal Papers - 5 b) Book chapters - 4 c) Conferences - 3 |
| Biosystems engineering | Dr. Monika Sharma | Assistant Professor | 38 | a) PhD, IIIT Hyderabad b) M.Sc. and B.Sc. Panjab University | 6 | 01-Jul-21 | Full time | Regular | | a) Publications - 27 b) Conference papers - 3 |
| CRISPR Technologies | Dr. Navjot Kaur | Assistant Professor | 29 | a) PhD, IISc Bangalore b) B.E. Panjab University | - | 1-Apr-22 | Full time | Regular | | a) Journal Papers - 5 |
| Biosystems engineering | Dr. Prashanth Kumar | Assistant Professor | 33 | a) PhD, Delft University of Technology b) MBA, Business School Nederland c) M.Sc., Uppsala University d) B.Tech Anna University | - | 06-Sep-21 | Full time | Regular | | a) Journal Papers - 10 |
| Engineering education | Dr. Rucha Joshi | Assistant Professor | 35 | a) Ph.D. and M.Sc., Purdue University c) B.Tech, Shivaji University | 9 | 26-Jul-21 | Full time | Regular | | a) Books - 2 b) Journal Papers - 7 c) Conference - 8 d) Patents - 2 |
| n/a | Dr. Rudra Pratap | Vice Chancellor | 57 | a) PhD, Cornell University b) MS, University of Arizona c) BTech, IIT Kharagpur | 28 | 01-May-21 | Full time | Regular | | a) Book - 1 b) Journal Papers - 104 c) Conference - 121 d) Patents - 17 |
| Biotechnology | Dr. Rupesh Deshmukh | Associate Professor | 43 | a) PhD, SRM b) MSc, IGAU c) BSc, MAU | - | 2-Jun-22 | Full time | Regular | | a) Book - 7 b) Journal Papers - 151 c) Conference - 3 d) Patents - 1 |
| Bio-engineering | Dr. Saikat Chakraborty | Professor | 47 | a) PhD, University of Houston b) M.E, IISc Bangalore c) B.E, Jadhavpur University | 16 | 2-Jun-22 | Full time | Regular | | a) Journal Papers - 46 b) Conference - 36 c) Patents - 5 |
| Applied Mathematics | Dr. Sanjay Bose | Professor | 65 | a) Ph.D., Stony Brook University | 39 | 01-Jul-21 | Full time | Regular | | a) Books - 3 b) Journal Papers - 102 |



| | | | | | | | | | |
|-------------------------|-----------------------|---------------------|----|--|---|-----------|-----------|---------|--|
| | | | | b) MS, Stony Brook University c) B.Tech, IIT Kanpur | | | | | c) Conference - 133 d) Patents (granted) - 5 |
| Computer Science and AI | Dr. Saumya Jetley | Assistant Professor | 32 | a) PhD, University of Oxford b) B.Eng, University of Pune | 2 | 1-Oct-21 | Full time | Regular | Papers and conference proceedings - 13 |
| Robotics and CPS | Dr. Shashank Tamaskar | Associate Professor | 36 | a) Ph.D. And M.S. , Purdue University b) B.Tech, IIT Bombay | 4 | 26-Jul-21 | Full time | Regular | a) Journal Papers - 3 b) Conference - 14 c) Patents - 11 |
| Applied Mathematics | Dr. Shashikant Pawar | Assistant Professor | 43 | a) PhD, IISc Bangalore b) M.Tech, NIT Hamirpur c) B.Tech, VJTI Mumbai | 7 | 2-Jun-22 | Full time | Regular | a) Journal Papers - 6 b) Conference - 8 c) Patents - |
| Clean Energy | Dr. Vishal Garg | Professor | 49 | a) PhD, IIT Delhi b) B.E, University of Jodhpur | | 2-May-22 | Full time | Regular | a) Journal Papers - 94 b) Conference - c) Patents - 3 |





Prof. Dr. Aditya Malik

**Vice-Chancellor
K R Mangalam University
Gurgaon, Harayana
India**

Tel.: (+91) 9811227399

Email: vc@krmangalam.edu.in

adityamalik59@gmail.com

I. EDUCATION

- 1998 **Habilitation** (Professorial Degree/Highest Academic Qualification at a German university). *Modern Indian Studies*. Academic Sponsors and Examiners: Profs. Monika Horstmann, Axel Michaels (University of Heidelberg) and David Shulman (Hebrew University, Jerusalem; Recipient of MacArthur Fellowship “Genius Grant”), University of Heidelberg, Germany.
- 1990 **Dr. phil.** (*magna cum laude*). *History of Religions of South Asia*. Dissertation Directors: Profs. Günther-Dietz Sontheimer and Hermann Kulke, South Asia Institute, University of Heidelberg, Germany. (Ranked among the top 50 universities of the world).
- 1984-1989 **Doctoral programme:** History of Religions of South Asia, Indian History, Social Anthropology, Classical Indology, Hindi, Rajasthani, Sanskrit language and literature, field work in India for doctorate.



| | |
|-----------|--|
| 1981-1983 | Study of Prehistoric Archaeology, Universities of Bonn, Erlangen, Köln, Germany. |
| 1981 | M.A. Ancient Indian History, Culture and Archeology (including social anthropology, Indian religions and prehistory). Deccan College Post-Graduate and Research Institute, University of Pune, India. |
| 1978 | B.A. (Hons.) Philosophy: Western and Indian philosophy; St. Stephen's College, University of Delhi, India. |

2. EMPLOYMENT

| | |
|-----------|---|
| 2018-21 | Appointment to Vice Chancellor, K R Mangalam University (Salary: Rs. 52 Lakhs per annum) |
| 2015 | Appointment to inaugural Professor and Dean, School of Historical Studies, Nalanda University (Salary: Rs. 52 Lakhs per annum) |
| 2013 | Promotion to top of scale (6.04), Reader/Professor, Dept. of Anthropology, School of Social and Political Sciences, University of Canterbury, New Zealand (Salary: NZ\$ 129,000 = approx. US\$ 110,000 per annum; top 2% income bracket in New Zealand) |
| 2008 | Promotion to Reader/Professor, University of Canterbury, School of Social and Political Sciences |
| 2004 | Promotion to Senior Lecturer/Associate Professor above the bar |
| 2001 | Senior Lecturer/Associate Professor, School of Philosophy and Religious Studies, University of Canterbury |
| 1999-2001 | Resident Representative/Director, Branch Office, South Asia Institute, University of Heidelberg, New Delhi. (Double emoluments, housing and school supplements). |
| 1998-1999 | Teaching & Research, Dept. of Modern Indian Studies, South Asia Institute, University of Heidelberg |
| 1996-1998 | German Research Council Senior Fellow, Dept. of Modern Indian Studies, South Asia Institute, University of Heidelberg. |
| 1995-1996 | Teaching & Research, Dept. of Modern Indian Studies, South Asia Institute, University of Heidelberg |
| 1994-1995 | Acting Chairperson (<i>Lehrstuhlvertretung</i>), Dept. of Modern Indian Studies, University of Bamberg |
| 1991-1994 | Senior Research Associate, Dept. of History of Religions and Philosophy, South Asia Institute, University of Heidelberg |

2. SERVICE (Selection)

| | |
|-----------|--|
| 2002-2004 | Head of Religious Studies, University of Canterbury (UC) |
| 2002-2003 | Representative to Academic Board, School of Philosophy and Religious Studies (UC) |
| 2003-2005 | Member, Head of School Advisory Group, School of Philosophy and Religious Studies (UC) |
| 2004-2008 | Member, Research Committee, School of Philosophy and Religious Studies (UC) |



| | |
|-----------|--|
| 2006-2011 | Post-Graduate Co-ordinator, Religious Studies Programme (UC) |
| 2008-2009 | Co-President, Association of University Staff (UC) |
| 2009 | Member, Search Committee, Hiring Anthropology Faculty (UC) |
| 2009 | College of Arts Representative, Central Promotions Committee (UC) |
| 2008-2014 | Founder Member, New Zealand South Asia Centre (UC) |
| 2009-2012 | Deputy Director, New Zealand South Asia Centre (UC) |
| 2010-2014 | Member, International Implementation Committee, College of Arts (UC) |
| 2011-2014 | Chair, Teaching and Learning Committee, School of Social and Political Sciences, College of Arts (UC) |
| 2012-2014 | Associate Director, New Zealand Research Institute, Victoria University, Wellington |
| 2013-2014 | Member, Research Committee, School of Social and Political Sciences (UC) |
| 2013-2014 | Head of Anthropology, University of Canterbury (UC) |
| 2013- | Peer Reviewer, German Research Foundation (DFG) |
| 2015-18 | Member, Academic Council, Nalanda University (NU) |
| 2015-18 | Chair, Board of Studies, School of Historical Studies, NU |
| 2016-18 | Member, Finance Committee, NU |
| 2016- | Peer Reviewer Fulbright-Nehru Fellowships India-USA |
| 2018-21 | Vice-Chancellor and Chair of the following committees: Academic Council, Board of Management, University Research Committee, Finance Committee, Academic Hiring Committee, IQAC (Internal Quality Assurance Committee), etc. K R Mangalam University |

3. RESEARCH AND TEACHING

Primary Research Areas:

Anthropology, Religion, and History
 Narrative, Performance, and Ritual
 Oral Traditions and Folk Culture
 Religion, Justice, and Law

Secondary Research Areas:

Religion and Modernity in South Asia
 Migration, Marginalization and Identity in South Asian communities

Primary Region:

Asia/South Asia
 Northern India
 Rajasthan
 Uttarakhand



Teaching Areas:

1. Social Anthropology

- a) *Ritual Performance*
- b) *Narrativity and Textuality*
- c) *Anthropology of Embodiment*
- d) *Anthropology of Religion*
- e) *Anthropology of Memory, Time and Consciousness*
- f) *Indian Studies & Post-Colonial Theory*
- g) *Anthropology and Indigenous Cultures*
- i) *Anthropology of Pilgrimage*

2. Religion and History

- a) *Hindu, Sikh and Jaina Religious Culture*
- b) *Politics and Representation of Hinduism*
- c) *Theory and Method in Religious Studies*
- d) *Religion and Violence*
- e) *Religion, Law, and Social Justice*
- f) *Religion and Modernity*

3. Oral and Textual Traditions

- a) *Oral Literature in South Asia*
- b) *Contemporary Indian Literature in English/Hindi/Rajasthani*
- c) *Classical Sanskrit Literature*

Language Instruction:

- a) *Hindi*
- b) *Rajasthani*
- c) *Sanskrit*

4. AWARDS, HONOURS AND GRANTS

Invited speaker at several national level webinars on Higher Education together with eminent Vice Chancellors and Directors of high ranking universities including Amity (Noida), O P Jindal, SRM, LPU etc. (Attendance between 300-3500 participants)

Life-Time Achievement Award: DHS Foundation-Upacri-Campbell University (South Carolina, USA), July 2020.

Most Innovative Vice-Chancellor Award: Golden Aim Awards: August 2020.

ICCR Chair in Indian Studies, Departments of Religious Studies and Asian Studies, Haifa University, Israel; Invitation received for 3 month visiting professorship in early 2018; **Chair jointly funded by Indian Council for Cultural Relations and Haifa University (declined).**



Fellow, Max Weber Centre for Advanced Cultural and Social Studies (one of nine centers of excellence out of 250 institutions relating to sociological research in Germany), University of Erfurt, Germany. Grant for teaching buy-out for senior professor **Euro 81,600, Euro 13,200 accommodation, Euro 4,200 Conference Travel and Research (Funded by European Union COFUND Marie Curie Grant)**.
Sept. 2016-August 2017

Nomination: Represented Nalanda University at national **Inspired Teachers In-Residence Programme** with 12 other university teachers from around India hosted by **President of India, Shri Pranab Mukherjee** at Rashtrapati Bhavan, New Delhi.
23-29 April 2016

Fellow, Max Weber Centre for Advanced Cultural and Social Studies, University of Erfurt, Germany. Grant for teaching buy-out for fixed term Lecturer in Anthropology Department: **Euro 45,000; Accomodation + Travel: Euro 8,700.**
July 2013-June 2014

Conference grant

International conference on *„Realizing Justice? Encountering Normative Justice and the Realities of (In)Justice in South Asia.’* 11-13 June, 2014, Erfurt. Funding received from German Research Council (DFG), Max-Weber-Kolleg & University of Erfurt: approx. **Euro 18,000.**

Associate Director, New Zealand India Research Institute (NZIRI), Victoria University, Wellington. Annual Contestable Research and Conference Fund of NZIRI: **NZS 1 Million.**
Nov. 2012-May 2015

Visiting Professor, Cluster Innovation Centre, University of Delhi.
International return flight (NZ-Delhi), Honorarium of **INR 30,000** per month
Aug.-Dec. 2012

UC Summer Scholarship Grant for Graduate Research Assistant **NZS\$5000**
Dec. 2010-Jan. 2011

Founder Member and Deputy Director, New Zealand South Asia Centre (NZSAC), University of Canterbury
2009-2012

Co-President, Association of University Staff, University of Canterbury
2008

Visiting Professor, Dept. of Indology, University of Wuerzburg
International return flight (Delhi-Frankfurt); Teaching Honorarium
May 2008

Visiting Professor, Israel Academy of Sciences and Humanities and Institute for Advanced Studies, Hebrew University, Jerusalem. International return flight (NZ-Tel Aviv); Accommodation, Honorarium



July 2005

President, Indian Social and Cultural Club, Inc.
Christchurch, New Zealand
2003-2004

Member, Governing Body, Lady Irwin College, University of Delhi
July 2000-June 2001

UNESCO International Consultant

Oct. 1999

Two month assignment, multimedia project on Rajasthani Performance Tradition, Indira Gandhi National Center of the Arts (IGNCA), New Delhi.

Honorarium of approx. US\$16,000

Feb. 1997

Two month assignment, multimedia project on Rajasthani Performance Tradition, Indira Gandhi National Center for the Arts (IGNCA), New Delhi.

Honorarium of approx. US\$16,000

German Research Council Fellow

Twenty-two month full-time senior fellowship (*DFG-Habilitationsstipendiat*) for writing *Habilitationschrift*, Dept. of Modern Indian Studies, South Asia Institute, University of Heidelberg. Approx. **Euro 50,000**.

1996-1998

Senior Research Associate: salaried full-time three year research position. Fieldwork expenses for one year. Project awarded to the Dept. of History of Religions and Philosophy, South Asia Institute, University of Heidelberg. Approx. **Euro 175,000**.

1991-1994

Travel, Research and Conference Grants between NZ\$4,000-8,000

2013, 2012, 2010, 2009, 2008, 2007, 2006, 2005, 2004

University of Canterbury, School of Philosophy and Religious Studies Grants,
College of Arts Contestable Grants, School of Social and Political Sciences Grants
2002

Department of Philosophy and Religious Studies: Panel convener at 17th European Conference on Modern South Asian Studies, University of Heidelberg, Germany.

1999

German Research Council: presentation at international symposium on *Pilgrimage and Complexity* organized by University of Colorado (Boulder) and Indira Gandhi National Center for the Arts (IGNCA), in New Delhi.

1987

South Asia Institute, University of Heidelberg: presentation at VIIth World Sanskrit Conference, Leiden, Holland.

1987

Ancient India and Iran Trust, Cambridge: lecture at Center for South Asian Studies, University of Cambridge, UK.



Doctoral Fellowship & Teaching Assistanships

1987-1989

Wissenschaftliche Hilfskraft (Teaching Assistantship),
Dept. of History of Religions and Philosophy, South Asia Institute,
University of Heidelberg.

1984-1987

Doctoral fellowship with travel expenses for eight months fieldwork in India,
Friederich Naumann Foundation, Germany.

1981

Three month fellowship with overseas travel expenses, German Archaeological
Institute (Bonn) to study prehistory at three German universities.

5. FIELDWORK EXPERIENCE

2008/2009/

2010/2011

2012/2017

Fieldwork in Kumaon (Uttarakhand, India); research on
Goludev and related regional deities, oracular trance and ritual;
alternative legal systems and practices; Fieldwork in
Ranthambore, Rajasthan on early medieval historical texts and
oral narratives.

2006

Fieldwork in Kumaon (Uttaranchal); research on Goludev,
oracular trance and ritual.

2004

Fieldwork in Kumaon (Uttaranchal); research on Goludev,
oracular trance and ritual.

1991/92/94

Fieldwork in rural east and southeast Rajasthan; research
project on Devnarayan; focus on oral traditions and folk cults.

1984-85

Fieldwork in Pushkar, Ajmer and nearby villages in east
Rajasthan; focus on pilgrimage and sacred space.

1983

Archeaological excavations at Hunas (Bavaria, Germany)
conducted by the University of Erlangen.

1982

Archeaological excavations at Andernach, Ahriansdorf and
Müllheim-Kärlich (Rheinland-Pfalz, Germany) conducted by
the University of Köln and the German Research Council.

1981

Archeaological excavations at Didwana (Rajasthan, India)
conducted by Deccan College, University of Pune.

6. RECENT CONFERENCE ORGANIZATION

(1) Malik, Aditya, Bandyopadhyay, Sekhar, Venkateshwar, Sita (co-conveners):
Changing India: From Decolonization to Globalization. International conference, New
Zealand India Research Institute, Victoria University, Wellington, 28-29 August, **2013**.
Keynote Speaker: Kaushik Basu (Vice-President, World Bank).

(2) Malik, Aditya, Bandyopadhyay, Sekhar (co-conveners): *Society, Religion and
Modernity in India*. International conference, New Zealand India Research Institute,
Wellington & Central University of Hyderabad, Hyderabad, 28-29 November, **2013**.



Keynote Speaker: Aditya Malik.

(3) Malik, Aditya, Harlan, Lindsey (panel conveners). *A Proliferation of Friends: Hindus, Muslims and Jains in Narrative, Ritual and History*. American Academy of Religion, Baltimore, 22-26 November, **2013**. **Panelists:** Lindsey Harlan, Peter Gottschalk, Vasudha Narayanan, Aditya Malik. Respondent: Ann Grodzins Gold. Presider: John Cort.

(4) Malik, Aditya (convener). *Talking Texts: A Pretext for a Conversation in the Arts*. University-wide, monthly research symposium, hosted by School of Social and Political Sciences, **2013-14**.

(5) Malik, Aditya, Linkenbach, Antje (co-conveners): *Realizing Justice? Encountering normative justice and the realities of (in)justice in South Asia*. International conference hosted by Max-Weber-Kolleg, University of Erfurt, and Deutsche Forschungsgemeinschaft, 11-13 June, **2014**.

(6) Malik, Aditya, Wright, Samuel, Roychoudhuri, Ranu (co-conveners): *Imagining Histories, Writing Pasts*. International workshop hosted by Nalanda University, Rajgir, Nalanda, 11-12 March, **2016**.

(7) Malik, Aditya, Ray, Himanshu Prabha (co-conveners): *Heritage in Context: Balancing the Global with the Local*. International conference hosted by Nalanda University and Munich University at India International Centre, New Delhi, 20-22 August, **2016**.

(8) Malik, Aditya (convener) *Reflections on the Election in USA*. Cross-disciplinary seminar series, Summer Semester, Max-Weber-Centre for Advanced Social Science Studies, University of Erfurt, Germany, **2017**.

(9) Malik, Aditya, Mansukhani, Annalisa, Chaturvedi, Aditya (co-conveners) *Body, Space and Performance: Theory and Praxis*. Bi-national workshop hosted by Nalanda University, Rajgir, Nalanda, 3-6 March, **2018**.

7. MEMBERSHIP OF ACADEMIC INSTITUTIONS

- (1) Folklore Fellows (Turku, Finland)
- (2) Indira Gandhi National Centre for the Arts (IGNCA, New Delhi)
- (3) North American Society for Sanskrit-Hebrew Studies
- (4) American Academy of Religion

8. OTHER INTERESTS/TRAVEL

- (1) Arts - painting
- (2) Music - classical western and Indian
- (3) Sports – cricket, badminton
- (4) Experience in intergroup, youth activities
- (5) Travelled extensively in India, Europe, Israel, New Zealand, Australia, U.S.A.



Aditya Malik

Annotated List of Publications

Sole Authored Books:

1. Malik, A., (2016) *Tales of Justice and Rituals of Divine Embodiment: Oral Narratives from the Central Himalayas*. New York: Oxford University Press. ix-xx, pp. 295. Reprinted 2018 South Asia Edition (Delhi: OUP).

“Malik’s vivid ethnography brims with superb theoretical reflections on self, being, embodiment, possession, and modernity in the context of the ritual and narrative performances of justice commemoration and realization. Engaging and creative, this fine book is a must read for scholars focusing on the interdisciplinary study of justice and, more generally, working in the fields anthropology, philosophy, history, and religious studies.”—Lindsey B. Harlan, Professor of Religious Studies, Connecticut College

“Aditya Malik offers a rare, serious, protracted conversation between an intimate ethnographic description of a regional Hindu deity's devotees and philosophical questions inherent within the human condition. These questions concern suffering, embodiment, and quests for justice both cosmological and personal.”—Ann Grodzins Gold, Thomas J. Watson Professor of Religion and Professor of Anthropology, Syracuse University

“This is a powerful book. The petitions offered to Goludev by people from different castes and classes, in a variety of languages including English, are absolutely fascinating. That a folk deity should serve as a court of justice in the manner of a modern judicial system is totally amazing. The book is going to make an important mark in our thinking. It will be used by anthropologists, South Asianists, scholars of Religious Studies, folklorists, philosophers, and lay readers. Perhaps for the first time it will bring scholars of rural cultures into conversation with social thinkers and will be seen as a breakthrough in the scholarship related to human societies.”—Velcheru Narayana Rao, Visweswara Rao and Sita Koppaka Chair in Telugu Literature, History and Culture, Emory University

“This powerful and vivid ethnographic survey explores its subject with passion and seriousness, through transcripts of conversations with devotees, singers and dancers, accounts of rituals including possession and embodiment, detailed exploration of written petitions to the deity, and oral and written stories of the life and deeds of Goludev and other, associated, Himalayan gods. ... Malik’s readings of the *manauti*—some of which are very moving—bring him to discover a conception of justice not merely as an abstract concept upheld by faceless state organisations, but as deeply embedded in the concrete concerns of everyday... His exploration of the *jagars* develops into considerations of ritual practice itself as a manner of understanding and conceptualising the human self in its ability to shapeshift, alter and transform. Thus an enquiry that begins in the Himalayan foothills ends in reflections on selfhood, justice,



and the presence of the hidden and the extraordinary amidst (and undifferentiable from) the everyday. ... **Tales of Justice is a compelling, powerful and at times moving ethnographic study**, which will provide food for thought to those interested in Eastern traditions of storytelling, in spirit possession and ecstasy, and in how such phenomena are woven into the texture of human life.” Valentin Gerlier, *Temenos Academy Review*

“Aditya Malik’s *Tales of Justice and Rituals of Divine Embodiment: Oral Narratives from the Central Himalayas*...is the first book to explore the intersection of oral narrative, divine embodiment, and conceptions of justice. ... [A] **major and a highly welcome contribution to the study of oral traditions and religious practice in general, of South Asia in particular.**” John Leavitt, *Asian Ethnologist*.

“[T]he book is fascinating, beautifully written, and offers a wealth of ethnographic material that would excite the envy of anthropologists, and engage South Asianists, folklorists, philosophers, Religious Studies scholars, historians, and general readers.” Marcia S. Calkowski, *Anthropos*.

2. Malik, A. (2005) *Nectar Gaze and Poison Breath: An analysis and translation of the Rajasthani oral narrative of Devnarayan*. New York: Oxford University Press, vii-xxv, pp. 548.

This book is based on the results of five years of highly competitive research grants (totalling approx. Euro 225,000) of the German Research Council, including **twelve months of field work in India**. It contains 192 pages of ground-breaking analysis into the performative, visual, verbal, social, historical, and religious meanings of the 24 hour long narrative, along with 25 pages of notes, accompanied by 318 pages of original, annotated translation reflecting the dialogic structure of the sung and spoken oral delivery. The translation is based on the transcription of one of the most important, popular religious, oral narratives from India. (See Malik, A. 2003).

Select comments:

Aditya Malik's meticulous and sensitive study of the Rajasthani Devnarayan epic opens up a world of surpassing richness. The sung epic text, hitherto unstudied, is one of the most colorful and imaginative known to us from South Asia. Malik interprets the text with deep insight, drawing out its implications for our understanding of fundamental problems in **North Indian historiography, Rajasthani cult and ritual, and the study of living bardic traditions. This is a work of exemplary scholarship.**

David Shulman, Professor of Indian Studies, Director,
Institute for Advanced Studies, **Hebrew University,**
Jerusalem.

This is an extremely important work within the fields of oral performance studies and South Asian religions... Malik's manuscript strikes me as a masterful, highly polished, extremely insightful presentation of a major, complex and vastly rich cultural performance tradition...(his) scholarship seems genuinely impeccable, the writing



style is refreshingly lucid, and his ideas are strikingly original...(the work) would make a significant contribution – not just to a single field but to several: **folklore, performance theory, theories of orality and literacy, and – not at all least important – South Asian religion and phenomenology of religion writ large...**

Ann Grodzins Gold, Professor of Anthropology and Religion, Syracuse University, Reviewer for Oxford University Press (New York).

3. Malik, A. (1993) *Das Puskara-Mahatmya: Ein religionswissenschaftlicher Beitrag zum Wallfahrtsbegriff in Indien.* [The Pushkara-Mahatmya: A religio-historical contribution to the idea of pilgrimage in India.] Stuttgart: Franz Steiner Verlag, xiii, pp. 422.

This book is based on **eight months of field work in India** supported by the Friedrich-Naumann Foundation (Germany), as well the collation and comparison of four 18th and 19th century handwritten manuscripts of approx. 950 verses each in Sanskrit. It contains an extensive original analysis (110pp.) of the interpretation of the meaning and practice of pilgrimage in India in the context of ancient Vedic ritual; a critical edition of the manuscripts (with a full list of variant readings) as well as the first translation of the edited Sanskrit text into German (or any other European language).

Select comments:

Malik's introduction provides an intensive, original, and extremely interesting discussion of the significance of the Pushkara-Mahatmya ... Malik takes the text as an interpretation of the pilgrimage place ... He uses the text ... to discuss the transition from sacrifice to pilgrimage in Indian religious practice and the tension between the sanctified settlement (the kshetra) and the forest in Indian systems of value ... The book is thus a significant scholarly contribution ... because it provides a context for understanding the text in terms of categories that are of basic importance to the history of religion in India.

Anne Feldhaus, Annals BORI, LXXVI, 1995

The growing literature on pilgrimage sites is well and interestingly served by this study of a Sanskrit text devoted to Pushkara ... it is here edited ... translated into German, and provided with a description of the area, comprehensive analysis of the text, and appendices that include sketch maps, photographs, and a full English summary of the analysis ... a massive task, requiring unusual philological skills, wide-ranging correlation of primary and secondary sources, and painstaking fieldwork, has been accomplished here most expeditiously. The result is a new clear understanding of the role of Brahmā in the Hindu pantheon and of the origins and evolution of an Indian Tirtha.

J.C. Wright, BSOAS, Vol. LIX, Part 1, 1996

The author discusses the history and geography of Pushkar ... Modern historical research as well local tradition are mentioned. Indologists will be grateful ... for the neat edition and faithful translation. Students of the history of religion will find the



introductory essay richly rewarding. The work is a welcome addition to the growing Puranic literature in European languages. Both the author and the publisher have taken the utmost care to produce a volume that does the series proud.

Klaus Klostermaier, *Anthropos*, 4/6, 1994

4. Malik, A. 2021. *Hammira. Chapters in Imagination, Time, History* Boston/Berlin: De Gruyter. (Religion and Society Series)

Select Comments:

Aditya Malik has a very strong reputation as an ethnographer and historian of India. For that reason readers will pay attention to a new publication. Moreover, the author's overarching questions about shared spaces and friendships across religious differences are particularly critically important at this juncture in time and graduate students know that!

The interconnections are a departure from previous work on this subject. This has been limited to just what the text tells us about Hammira and the Sultan. The exploration of the larger political domain and the cultural ethos of the period has not been adequately examined before.

Anonymous Readers, De Gruyter Publishers
(Boston/Berlin)

Edited Volumes:

1) Linkenbach, A., Malik, A. (eds.) (forthcoming 2021) *Realizing Justice? Normative Orders and the Realities of (In)justice in India*. New Delhi: Manohar.

2) Malik, A., Sweetman, W. (eds.) (2016) *Hinduism in India: Modern and Contemporary Movements*. Delhi: Sage Publications, pp. 356.

3) Brückner, H., Lutze, L., Malik, A. (2007 Reprint of 1993 publication) *Flags of Fame: Studies in South Asian folk culture*. Delhi: Manohar Publishers, xi, pp. 503.

This volume contains 15 original contributions of scholars from USA, Germany, India, and France. It was first published in 1993 and then reprinted on popular demand through 'Print on Demand' technology in 2007. My contribution to this volume lies in structuring the book into thematic sections, editing and formatting (camera-ready copy), co-composing the introduction, and preparing the 16 page index.

Select comment:

This book is another **benchmark in the area of South Asian folk cultural studies, distinguished by the work of A.K. Ramanujan, Stuart Blackburn, Ann Grodzins Gold, Gloria Raheja, Alf Hildebeitel, Bruce Kapferer ...** This is an excellent reference work consisting of fifteen articles and extensive bibliographies for a range of



topics such as ball games in the Himalayas, spirit possession, folk poetry and epics, genealogies and other oral traditions, rituals and cults, and Shaivaite and Sufi sects ... The ethnographies suggest localized cults as well as commonalities between regions.

Shail Mayaram, *Contributions to Indian Sociology* (n.s.) 31, 1, 1997

4) Malik, A., Feldhaus, A., Brückner, H., (2005) *In the Company of Gods. Essays in memory of Günther-Dietz Sontheimer*. Delhi: IGNCA/Manohar Publishers, pp. 409.

This volume contains the contributions of 20 scholars from Germany, Israel, Russia, Canada, USA, and India. My contribution to this volume has involved extensively corresponding with the authors and the publishers, editing the articles, structuring the volume into different sections, and composing the introduction.

5) Brückner, H., Malik, A., Feldhaus, A. (2004) *Essays on Religion, Law and Literature*. (Collected papers of Günther-Dietz Sontheimer) (Vol. 2) Delhi: IGNCA/Manohar Publishers, pp. 467.

6) Malik, A. (ed.) (2003) *Shri Devnarayan Katha: An oral narrative of Marwar*. (Introduction in Hindi/English; Text in Rajasthani) Heidelberg/New Delhi: South Asia Institute/D.K. Printworld, vi-xiv, 408.

This book is the first of two volumes (see Malik, A. 2005) resulting from research grants of the German Research Council. It contains 82 pages of introductory bi-lingual analysis of the narrative and its oral structure in English and in Hindi preceding 300 pages of original text in Rajasthani. It is based on extensive field work in western India. My contribution has involved locating singers and recording the 24 hour long, sung, oral narrative, transcribing the recordings, typing up the transcription in Devanagari script, writing the introduction and compiling the 9 page glossary of terms and characters from the narrative.

7) Feldhaus, A., Brückner, H., Malik, A. (1997) *King of hunters, warriors, and shepherds. Essays on Khandoba*. (Collected papers of Günther-Dietz Sontheimer) (Vol. I). Delhi: IGNCA/Manohar Publishers, pp. 352.

Chapters in Books:

1) Malik, A. (2019) The Swirl of Worlds: Possession, Porosity and Embodiment. In Fuchs, Martin *et al.* (eds.) *Religious Individualization: Historical Dimensions and Comparative Perspectives*. (559-582). Berlin/Boston: De Gruyter.

2) Malik, A. (2016) Possession, Alterity, Modernity. In S. Bandyopadhyay & A. Sen (eds.) *Religion and Modernity in India*. (36-63). New Delhi: Oxford University Press.

3) Malik, A. (2016) Folk Hinduism: The Middle Ground? In W. Sweetman & A. Malik (eds.) *Hinduism in India: Modern and Contemporary Movements* (176-193). New Delhi: Sage Publications.



- 4) Malik, A. (2015) The *darbar* of Goludev: Possession, Petitions, and Modernity. In William S. Sax & Helene Basu (eds.) *The Law of Possession. Ritual, Healing, and the Secular State*. (193-225.) New York: Oxford University Press.
- 5) Malik, A. (2012) On Violence and Identity: Three Vignettes. In *Te Awatea Review* Vol. 10, 1&2: 22-27. Christchurch: Canterbury University Press. (5,600 words).
- 6) Malik, A. (2011) Bards and Reciters. In *Encyclopedia of Hinduism*, Vol. 3, (222-227) (3,300 words) Leiden: E.J. Brill.
- 7) Malik, A. (2011) Is possession really possible? Towards a hermeneutics of transformative embodiment in South Asia. In Fabrizio Ferrari (Ed.) *Health and Religious Rituals in South Asia: Disease, Possession and Healing in South Asia*. (1-18). UK: Routledge.
- 8) Linkenbach-Fuchs, A., Fuchs, M., Malik, A. (2010a) Bricoleurs of culture or What does it mean to be Indian in New Zealand? In Sekhar Bandyopadhyaya (Ed.) *India in New Zealand: Local Identities, Global Relations*. (114-154). Dunedin: Otago University Press.
- 9) Malik, A. (2010b) In the divine court of appeals: Petitions before the God of Justice. In Timothy Lubin *et al.* (Eds.) *Hinduism and Law*. (207-214). Cambridge: Cambridge University Press.
- 10) Malik, A. (2010c) On the representation of presence: The narrative of Devnarayan as a multi-media performance. In Christiane Brosius and Ute Huesken (eds.) *Ritual Matters*. (367-383). New Delhi: Routledge.
- 11) Malik, A. (2010d) Oral Traditions and Folklore. In *Encyclopedia of Hinduism*, Vol. 2, Article length entry (12, 000 words), Leiden: E.J. Brill.
- 12) Malik, A. (2006) Creating Presence: Performing the Oral Narrative of Devnarayan. In Heidrun Brückner, Elisabeth Schömbucher and Phillip Zarrilli (eds.) *The Power of Performance: Actors, Audiences and Observers of Cultural Performance in India*. (261-87). Delhi: Manohar Publishers.
- 13) Malik, A. (2006) Adityas, Bairagi, Bhairava, Bhima, Dashanami, Gayatri, Indra, Kalpa, Kapalika, Kshatriya, Mahatmya, Narasimha, Narayana, Pandavas, Pitha, Prajapati, Ramananda, Tapas. In Christoph Auffarth *et al.* (eds.) *Woerterbuch der Religionen*, Neuauflage, Stuttgart: Kröner Verlag. [Dictionary of Religion; New Edition]
- 14) Malik, A. (2005) The ascending avatara: Intertextuality in the narrative of Devnarayan. In Malik, A., Feldhaus, A., Brückner, H., (eds.) *In the Company of Gods. Essays in memory of Günther-Dietz Sontheimer*. (127-140). Delhi: IGNCA/Manohar Publishers.



15) Malik, A. (2005). Introduction. In Malik, A., Feldhaus, A., Brückner, H., (eds.) *In the Company of Gods. Essays in memory of Günther-Dietz Sontheimer.* (9-27). Delhi: IGNC/Manohar Publishers.

16) Malik, A. (2004) Religious narratives and the construction of order. In Madhu Khanna (Ed.) *Rta: The cosmic order.* (109-124). New Delhi: IGNC/D.K. Printworld.

17) Malik, A. (2003) Bhopa, Devnarayan, Mela, Sacred Places. In Peter J. Claus *et al.* (Eds.) *South Asian Folklore: An Encyclopedia*, (63, 146, 397-398, 528-529). New York: Routledge Publishers.

18) Malik, A. (2002) Mahabharata. In Hans Dieter Betz *et al* (eds.) *Religion in Geschichte und Gegenwart. Handwoerterbuch fuer Theologie und Religionswissenschaft.* (681-682). 4. Auflage., Bd. 5. Tübingen: Mohr Siebeck. [Religion in historical and contemporary (perspective). Concise dictionary for Theology and the Science of Religion; 4 Edition, Volume 5].

19) Malik, A. (2001) The ambivalence of power: Representations of women in the oral epic of Devnarayan. In Molly Kaushal (ed.) *Chanted Narratives* (151-162). New Delhi: IGNC/D.K. Printworld.

20) Malik, A. (2001) Speaking of Indology: Cultural Studies as communication. In *Max Müller and his contemporaries.* (179-190). Kolkatta: The Ramakrishna Mission Institute of Culture.

21) Malik, A. (1999) Stringing a necklace of heads: Sacrifice and death in the cult of Devnarayan. In N.K. Singhi, R. Joshi (eds.) *Religion, ritual and royalty.* (54-75). (Institute of Rajasthan Studies, Jaipur) New Delhi: Rawat Publications (Article reprinted from 1999a; see below).

22) Malik, A. (1997) "Hinduism or: Three-thousand-three-hundred-and-six ways to invoke a construct". In G.D. Sontheimer, Hermann Kulke (eds.) *Hinduism Reconsidered.* (10-31). Delhi: Manohar Publishers, (2nd revised edition).

I was invited to write the introductory chapter to the 2nd revised edition of this highly acclaimed book which been published in four consecutive editions now since 1989.

23) Malik, A. (1996) Brahmas Heirat mit dem Hirtenmädchen Gayatri - Zwei Legenden von der Entstehung Puskaras. [Brahma's wedding to the cowherdess. Two Legends of the origin of Pushkar]. In Dieter B. Kapp (ed.) *Nanavidhaikata: Festschrift für Hermann Berger.* (132-148). Wiesbaden: Harrasowitz Verlag. [Festschrift for Hermann Berger]

24) Malik, A. (1995) Mündliche Epen und Volkskulte in Rajasthan: Tod der Helden - Geburt der Götter. [Oral epics and folk cults in Rajasthan: Death of heroes and birth of gods] In Walther Heissig (ed); *Formen und Funktionen mündlicher Traditionen.* (106-120). Bonn: Rheinisch-Westfälische Akademie der Wissenschaften. [Form and Function of oral traditions; Academy of Sciences, Bonn, Germany]

25) Malik, A. (1994) The birth of Devnarayan or why God arose from the



underworld. In Dilip Chitre *et al.* (eds.); *Tender Ironies: A tribute to Lothar Lutze*. (86-92). Delhi: Manohar Publishers.

26) Brückner, H., Malik, A. (2007/1993) Introduction. In H. Brückner, L. Lutze, A. Malik (eds.) *Flags of fame: Studies in South Asian folk culture*. (1-11). Delhi: Manohar Publishers.

27) Malik, A. (2007/1993) Avatara, avenger, and king: Narrative themes in the Rajasthani oral epic of Devnarayan. In H. Brückner, L. Lutze, A. Malik (eds.) *Flags of fame: Studies in South Asian folk culture*. (375-409). Delhi: Manohar Publishers.

28) Malik, A. (1993) The king, the boar, and the waterhole: An oral narrative about the recreation of Puskara. In B.N. Saraswati, S.C. Malik, Madhu Khanna (eds.) *Art: The integral vision. A volume of essay in felicitation of Kapila Vatysayan*. (281-288). New Delhi: D.K. Printworld,

29) Malik, A. (1990) The Pushkara-Mahatmya: A short report. In Hans T. Bakker (ed.), *The history of sacred places as reflected in traditional literature*. (192-207). Leiden: E.J. Brill.

Papers in Refereed Conference Proceedings:

1) Malik, A. (1999a) Stringing a necklace of heads: Sacrifice and death in the cult of Devnarayan. In Elisabeth Schoembucher, Claus Peter Zoller, (eds.) *Ways of dying: Death and its meanings in South Asia*. (233-248). (South Asia Studies, University of Heidelberg). Delhi: Manohar Publishers.

2) Malik, A. (1999b) Powers of the timid: Humour in the Rajasthani oral epic of Devnarayan". In Christina Oesterheld, Claus Peter Zoller, (eds.) *Of clowns and gods, Brahmans and Babus: Humour in South Asian Literature*, (157-168) (South Asia Studies, University of Heidelberg) Delhi: Manohar Publishers.

3) Malik, A. (1999c) Megaliths and memorial stones in South Asia: Ethnoarchaeological perspectives. In K.W. Beinbauer, G. Cooney *et al.* (eds.) *The megalithic phenomenon: Current research and ethnoarchaeological perspectives*. (251-262). Weissbach: Beier und Beran.

Articles in Refereed Scholarly Journals:

1) Malik, A. (2009) Dancing the body of God: Rituals of embodiment from the Central Himalayas. In *SITES: Journal of Social Anthropology and Cultural Studies*, 6, 1, 80-96, special volume.

2) Malik, A. (1982) Zu den Höhlenmalereien von Bhimbetka. [On the cave paintings of Bhimbetka] In *Beiträge zur Allgemeinen und Vergleichenden Archäologie*, 4, 103-107. [Contributions to General and Comparative Archeology, Bonn, Germany]



Papers in Non-Refereed Scholarly Journals:

1) Malik, A. (2000) Wozu indologische Forschung in der Gegenwart? Kulturwissenschaft als Kommunikation. [Indological research in the contemporary world – for what? Cultural Studies as Communication] In *Indien in der Gegenwart*, Berlin/New Delhi, Bd. V, Nr. 1-2, 63-80. [India in the contemporary world; Vol. 5, no. 1-2].

Book Reviews

- 1) A. Hildebeitel (ed.) *Criminal gods and demon devotees*. In *Anthropos*, March 1991.
- 2) J.D. Smith *The epic of Pabuji*. In *Anthropos*, March 1993.
- 3) A. G. Gold *A Carnival of Parting*. In *History of Religions*, Feb. 1996.
- 4) G. Emmer, H. Mückler (eds.) *Alltagskulturen in Indien*. In *Anthropos*, March 1999.
- 5) S. & R. Freed, *Hindu Festivals in a North Indian Village*. In *Anthropos*, Sept. 2000.
- 6) K. Gudermuth, *Kultur der Liebe in Indien*. In *Anthropos*. Sept. 2005.

Creative Work

- 1) Malik, A., Buckingham, J., (2003-2004) *Gandhi: A Photographic Exhibition*. Tour: Manawatu Museum 8 Sept.-16 Nov. 2003; Otago Museum 6 Dec.-8 Feb. 2004; Pataka Museum 14 Feb. – 2 May 2004; Whangarei Museum 30 Aug.-24 Oct. 2004.
- 2) Malik, A., Buckingham, J. (2002) *Gandhi: A Photographic Exhibition*. Canterbury Museum, Christchurch, Aug.-Nov.
- 3) Malik, A. *Devnarayan: A multimedia DVD-ROM*. Sponsored by UNESCO (Paris) and IGNCA (New Delhi).
- 4) Malik, A. (1998) Academic advisor to 'Der heilige See in Pushkar', documentary television film on the Indian pilgrimage centre of Pushkar. Produced by German national TV channels ARD and SWF3 (45 minutes, June 1998).

Other:

- 1) Malik, A. (1995) "Devnarayan – Ein Volksgott und sein Epos", "Pushkara – Brahmas Pilgerort am Lotusteich". In *Rajasthan: Land der Koenige*. Exhibition Catalogue, (181-186, 187-198). Linden-Museum Stuttgart, Germany, [Kunstverlag Gotha]. June-Oct. 1995.
- 2) Malik, A. (in press) Brahma. In K.L. Sheshagiri Rao (chief ed.) *Encyclopedia of Hinduism*. India Heritage Research Foundation.



Invited Lectures and Seminar Contributions (Selection)

- 2017 *The Poet's Dream: Imbrolios of History and Imagination in Medieval and Contemporary India.* Invited lecture. Departments of Anthropology, Central Asian Studies, Indian Studies, University of Leipzig, Germany.
- 2017 *Hammira: Inception of a History.* Research Colloquium. Max Weber Centre for Advanced Cultural and Social Studies, University of Erfurt, Germany.
- 2016 Introductory Note. *Heritage in Context: Balancing the Global with the Local.* International conference, New Delhi.
- 2015 *The Darbar of Goludev: Notes of Justice, Truth and Divine Embodiment in the Central Himalayas.* In *Entre Nous*. Lecture Series, School of Historical Studies, Nalanda University.
- 2014 *Telling the Truth: Practising Justice in the Central Himalayas.* Invited lecture. Centre for Modern Indian Studies, University of Goettingen.
- 2013 *Critical Modernity: Reinvisioning Society and Religion in India.* Key-note address; Conference on *Society, Religion and Modernity in India*. Central University of Hyderabad and New Zealand India Research Institute (NZIRI) in Hyderabad.
- 2013 *Divine Intervention: Justice and Ritual Embodiment in the Central Himalayas.* Public Lecture, University of Leipzig.
- 2013 *Writing Intimacy: Petitions to the God of Justice.* Invited Lecture; University of Wuerzburg.
- 2013 *The Conditions of Justice: Language, Truth and Ritual in South Asia.* Colloquium, Max-Weber-Kolleg, University of Erfurt.
- 2013 *The Violence of Modernity & The Paradox of Modernity.* Public Lectures, Central University of Hyderabad by invitation of the Vice-Chancellor; Department of Political Science.
- 2012 *Many Stories – Many Worlds: Oral Narratives and Cultural Communication in India.* Public Lecture, University of Delhi Popular Lecture Series hosted by the Vice-Chancellor.
- 2011 *On the Possibility of Alterity: Ritual and Possession in the Central Himalayas.* Public Lecture, Brown University, Religious Studies Department.
- 2010 *Hammira: Inception of a History.* IAHR World Congress, Toronto.



- 2010 *Embodying Justice: Ritual, Healing and Narrative in the Central Himalayas*. School of Social and Political Science seminar, Canterbury.
- 2009 *Identity beyond citizenship? Historical and Philosophical reflections on transnational and transcultural identity from South Asia*. 18th New Zealand Asia Society conference, Wellington.
- 2009 *Fluid Identities: Imagining Religion in a Transformational Context*. University of Goettingen; Public Lecture, Centre for Modern Indian Studies.
- 2009 *Embodiment, Memory and Justice: Reflections on Ritual and Narrative in the Darbar of Goludev*. Cluster of Excellence, University of Muenster, Germany; International Workshop: "Law of Possession".
- 2009 *Religion, Violence and the (im)possibility of Peace*. India International Centre, New Delhi; Public Lecture,
- 2008 *Dancing the body of God: Tales of justice and rituals of embodiment from the Central Himalayas*. Institute for South Asian, Tibetan and Buddhist Studies, University of Vienna, Austria
- 2008 *Transforming cultural performances through new media: The Devnarayan ritual performance as a DVD*. Cluster of Excellence: Asia and Europe in a Global Context, University of Heidelberg, Germany; Workshop on Staging Religion: Traditional performances in new public spheres and media,
- 2006 *On the representation of presence: Multi-media performances and interactive CD-ROMs*. International Symposium on Change and Stability in Ritual, University of Heidelberg, New Delhi.
- 2006 *Die Glocken von Goludev: Ritual und Erzählung aus der Perspektive nordindischer Volksreligion*, University of Heidelberg; Public Lecture, South Asia Institute.
- 2005 *Reading the Hammira-Mahakavya*. Summer Academy in Sanskrit, Institute for Advanced Studies, Hebrew University, Jerusalem.
- 2004 *Can God forget himself? Remembrance and forgetting in the narrative of Devnarayan*. International Symposium on "Anamnesis: Narratives of Remembrance and Forgetting". University of Canterbury.



- 2002 *Listening to images: Performance and Narrative in the Tradition of Devnarayan.* 17th European Conference on Modern South Asian Studies, Heidelberg.
- 2000 *Speaking of Indology: Cultural Studies as Communication.* Indo-German Symposium on Max Mueller and his contemporaries. The Ramakrishna Institute of Culture, Kolkatta.
- 2000 *Wozu indologische Forschung in der Gegenwart? Kulturwissenschaft als Kommunikation,* Inaugural Lecture, Faculty of Oriental and Classical Studies, University of Heidelberg, Germany.
- 2000 *Culture, Communication, and Cultural Studies,* Lecture Series Symbiosis Institute of Mass Communication, Pune, India.



Summary

Active collaboration between industry and education is of paramount importance and specially in a live-wire field like design. Have been a successful industrial designer and an academician for the past 33 years. I feel that the time has come for me to actively participate in being the catalyst between academia and industry and specially in the area of design research - an area which is still at a very nascent stage in India.

My strengths both as a professional as well as an academician have been in the areas of industrial design, design thinking, inclusive design and design research as well as academic pedagogy and curriculum development and future planning for new design schools/programmes.

Work experience - Academic.

Total academic experience of 20+ years

Dean of Advancement & Professor, Anant National University, Ahmedabad
July 2018 to August 2020.

- ~ Developing, planning and helping all aspects of a new degree programme including faculty recruitment, pedagogy, curriculum, student admissions, studio and workshops as well as the library.
- ~ Identifying and getting Institutional memberships of International and National Design organisations like WDO, Ico-D, Cumulus, ADI & InDeAs and being the spokesperson of the University
- ~ Handling the Fulbright Scholarship programme for the University
- ~ Conducting and planning outreach programmes and linkages with industry
- ~ Courses that I taught included Introduction to Design Thinking, Design Process, Design Methods, Inspiration, Design History, Materials - Properties & Processes, Exploring Design Disciplines and Inclusive Design
- ~ Member of university committees which included Academic Research, Curriculum Development, Leadership, Academic Council, Academic Policy, Board of Studies, Academic Misconduct & Grievance, Library and Design Decision Committee.

Faculty, National Rail and Transportation Institute, Vadodara
December 2019 to May 2020

- ~ Teaching the course "Introduction to Design Thinking" to the first year BBA (Transportation Management) and BSc (Transportation Technology) students.



Professor & Head, Department of Design, Nirma University

Jan '17 to March '18.

- ~ Setting up (almost single handedly) of a brand new independent Department of Design at Nirma University within a short period of six months.
- ~ Developing the pedagogy and the curriculum for the four year B.Des. programmes in Industrial Design & Communication Design
- ~ Developing, planning and executing all aspects of a new degree programme including faculty recruitment, student admissions, studio and workshops as well as the library.
- ~ All responsibilities of an academic Dean as well as the Director of an institute.
- ~ Mentoring faculty and students and taking academic courses
- ~ Developed a 5, 10 & 15 year perspective plan for the department which will soon become an Institute next year.
- ~ Outreach work involved in meeting academicians and deans of various institutes both from within India and abroad (UK and the US) for working out exchange programmes, joint projects and research collaborations.

Adjunct Professor, Indian Institute of Technology, Gandhinagar (IIT-Gn),

Feb '15 to Dec '18.

- ~ Teaching Design & Innovation and Design Electives to the engineering students, developing design courses as part of the proposed Design Minor for UG students.
- ~ Involved in internal design related activities of the new campus including developing disruptive classrooms and studios, wayfinding and campus aesthetics.
- ~ Outreach: Forming collaborations with National Innovation Foundation, Raksha Shakti University and the Ahmedabad Traffic Police on various projects and research assignments

Associate Professor & HOD, Design Management, Mudra Institute of Communications, Ahmedabad, MICA,

Dec '05 to Mar '07

- ~ Developing the curriculum and pedagogy for the new PG programme in Design Management
- ~ Teaching Design & Innovation and Design Electives to the students,
- ~ Involved in admissions and policy related issues

Student Faculty & Instructor-in-charge, BITS, Pilani

July '83 to May '84

- ~ While as a student I was appointed as an Instructor-In Charge for a 3 credit course on Theatre Art, Acting & Production (HUM 342), offered as a humanities elective to all third year and fourth year students.



Visiting Faculty / Academic Jury Member / Syllabus Development / Course Development

Have been invited at the following Institutes:

NID, Ahmedabad; from November 2000 till May 2009

MICA, Ahmedabad; from August '03 till December '05

SID, CEPT University; August '02 to May '08

CEPT University; Theatre Course, 2009

NIFT, Gandhinagar

Srishti School of Design, Bangalore; Jan '04 to May '04 & Jul '04 till Oct '04

IIMK, Calicut; January 2014.

My subjects have included Theatre Art, Acting & Direction, Stage Design, Design & Innovation, Design Management, Design IPR, Design Process, Materials and manufacturing, Corporate Identity, Wayfinding & Signage Design, Exhibition Design and Systems Design, Design Projects and Design Strategy and Holistic design for Managers.

Academic Projects

For NID, Ahmedabad:

~ Syllabus development and detailing for the UG & PG programmes on Furniture & Interior Design

For MICA, Ahmedabad:

~ Syllabus development and detailing for the PG programme in Design Management for MICA, Ahmedabad.

~ Helped set questions for MICAT 2006 Entrance Exam, while at MICA, Ahmedabad.

Publications

Books & Book Chapters

1. Co-author of the book "Design Manual for A Barrier-Free Built Environment", Published by UNNATI & Handicap International, December 2004 & for the reprint by Council of Architecture, 2014.
2. Theory & Operational Details of Lighting Systems, 1985.
Forms part of the theory notes for the course: Electronic & Instrumentation Practice, a third level course offered at BITS, Pilani.
3. Developed the lecture notes for the elective course: Theatre Art, Acting & Production, a fourth level course offered at BITS, Pilani, 1985, published as a text book in-house at BITS Pilani.

Conference Papers

Over a dozen talks/papers at various conferences on design and education.



Work experience - Industry.

Total industry experience of 30 years



Employment (August '2020 - July '2021)

Vice President - Design, Value Labs LLP, Hyderabad.

Value Labs specializes in digital enablement, software product development and data technology. They are a trusted technology partner to over 200 clients globally, serving them from 31 offices worldwide.

My job entailed design teaching and learning courses for the Design group as well as for the senior officers of the company in the areas of Design Thinking, Inclusive Design and Design Processes. I was also involved in certain design strategy tasks for the company.

Website: www.valuelabs.com



Employment (May '88 - Apr '03 & Apr '07 - Dec '16)

Founder & Director of Mind's Eye Design Pvt. Ltd., an industrial design and engineering consultancy established in 1988 at Ahmedabad with an all-India client base.

Design services offered included :

Design Strategy, Corporate Identity, Product Design, Exhibition Design, Wayfinding & Signage, Street Furniture design, Interior Space Design and Architecture.

Website: www.mindseyedesign.org

During the 3 decades at Mind's Eye Design, have done a number of projects in the areas of product design, exhibition design, corporate communications and branding, signage & wayfinding design as well as architecture and interior projects for many of the top companies of India such as:

CORE Parenterals Ltd., ICICI Ltd., Lalbhai Group of Companies, Arvind Ltd., Ashima Ltd., Torrent Group of Companies, TATA Liebert Ltd., Batliboi & Co., Seagrams Manu Co. Ltd. , Blue Star Ltd., Godrej Mfg. Co. Ltd., Mahindra Auto Specialities Ltd., Lodha Group, Adani Realty Ltd., ATE Ltd, Inspiron Ltd., Masibus Electronics, Supreme Industries Ltd., HCC Ltd., Indian Army (Southern Command), NID, and for consultants like HCPDPM, Vaastu-Shilpa Consultants, M/s Prabhakar Bhagwat and many more.



Our forte has been in multiple areas:

- Designed & developed over 300 products for industry, many of which are patented;
- Designed wayfinding and signage systems for townships like Lavasa, Pallava & Shantigram besides hospitals and interstate bus termini as well as factories.
- Corporate identity and branding for large corporates like TATA Liebert Ltd., Lalbhai Group of Companies, Inspiron Ltd.
- Over 12 million sft. of interior space design - largest being ICICI Ltd. Bandra Kurla (3,00,000 sft.)

Previous Employment:

Program Coordinator & Acting Director

(May '03 to Oct '05)

Vikram A Sarabhai Community Science Centre (VASCSC), Ahmedabad

My biggest challenge was to turn around the financials of the organisation from a deep red to a healthy black which I did within eighteen months. Funds were procured from company CSR, private donations as well as project funds from organisations like the America India Fund.

In addition to streamlining the workings and the financials of the Centre, I also introduced many new activities activities and programmes for the center, the main one being an annual science competition and exhibition called "Science is Fun" for all Gujarat based schools and children. The other major programme I started was a teacher training programme for middle school teachers of earth quake affected village schools.

New educational kits and print material were developed and are now available at the in-house Science Shop

The infusion of much required funds, additional manpower as well as new activities helped turn around the Centre from a dilapidated institute into a vibrant and an exciting centre where science learning by enquiry was at the helm.



Education

M Phil, IDC, IIT Bombay, 2013

Research work :

"An inclusive wayfinding system for a diverse population with specific reference to transportation hubs in India".

M Des - Industrial Design (Products), NID, Ahmedabad, 1988

Graduation Project:

"Educational Aids for Handicapped Children: A do it yourself approach"

BE (Hons) - Electrical & Electronics Engineering, BITS, Pilani, 1985

Graduation Project:

Worked on "Development of White Light Holography" at CSIO, Chandigarh.

Professional Courses

Program on New Product Design for India 1-14 June, 2005

Association for Overseas Technical Scholarship (AOTS), Osaka, Japan

ICSID INTERDESIGN 2014 - HUMANIZING A METROPOLIS 5-18 Feb, 2014

INTERNATIONAL COUNCIL FOR THE SOCIETY OF INDUSTRIAL DESIGN (ICSID)

Professional Memberships/Representation

- **Chartered Member** of the Chartered Designers of India, 2018 onwards
- CII National Committee on Design - Member, 2019-22
- ADI - National Executive Council - Member, 2020-22
- ADI - Ahmedabad Chapter - President, 2020-22
- BITS Alumni Association, Ahmedabad Chapter - Head
- NID Alumni Association, Secretary
- Panel Member, Traffic Cell of Raksha Shakti University, Ahmedabad
- Core Member, Ahmedabad Traffic Consultative Committee
- Core Member, The Accessibility Group, Ahmedabad
- **MISLE**: Member, Indian Society of Lighting Engineers (ISLE)
- **MIRC**: Member, Indian Roads Congress (IRC), New Delhi
- **AIID**: Associate Member Indian Institute of Interior Designers (IIID)

A handwritten signature in blue ink, appearing to be "Amit Sheth".

In The Past

- Committee Member, Confederation of Indian Industry (Ahmedabad),
- All India Council of Technical Education (AICTE), New Delhi
- Advisory Board, Curriculum Development Council, Government of Gujarat, Gandhinagar;
- Advisory Board, Gujarat State Secondary & Higher Secondary Board, Government of Gujarat, Gandhinagar;
- Advisory Board, Gujarat State Primary Education Board, Government of Gujarat, Gandhinagar;
- Executive Committee, Gujarat Council of Science & Technology, Government of Gujarat, Gandhinagar

Awards & Recognitions:

- **CII Design Excellence Awards 2020** - Jury Expert Panel
- **D'Source Corona Design Challenge 2020** - Jury Member
- **WACOM Design Challenge 2020** - National Jury Member
- Design Thinking workshops for J K Lakshmi Industries (under NASSCOM) & MRF Ltd.
- Jury Member of "**Design for Change**" an international design competition for schools (2012-18),
- Jury Member of "**CII - NID Design Excellence Awards**" (2019 & 2020),
- Jury Member of "**Smart India Hackathon**" 2018 & 2019
- Juror for "**Technopreneur**" event at Amalthea, IIT-Gandhinagar, 23/10/2015.
- Juror for "**Ideathon**" event, Vishwakarma Government Engineering College, 11/03/2015.
- **Mentor** by IIT-Gandhinagar, February 2014 for their student design competition on "Barrier Design"
- Invited by IIT-Gandhinagar for a brainstorming session on **Design Vision @ IITGn** on 22/11/2013.
- Consolation Prize: The first **ECO Awards**, 14th February 1998 for innovative product design using corrugated paper. Organized jointly by CORE EMBALLAGE LTD and NID, Ahmedabad.
- Empanelled by NID, Ahmedabad to work on their client projects as a consultant in the areas of product design, exhibition, signage and furniture design.
- Best Paper of the Session for the paper "Vertical Slit Rainbow Holography" at the 3rd All India Universities Youth Academic Week, April '85.



 14/1 Charankrupa Society, Satellite, Ahmedabad 380015 |  +91 98240 21607 |  amitsheth.india@gmail.com

Awards & Recognitions (contd.)

- Awards and prizes in the areas of Photography, Theatre & Applied Art at various university level youth festivals while as a student of BITS, Pilani and NID, Ahmedabad. 1980-85
- Minds Eye Design, the consultancy I founded is a much sought after design company for summer internships by students from all over the country. We have had 96 interns in the past 29 years. Only 3 or 4 of the best students every summer get this opportunity.
- Mentor and project guide for final year design students from various design institutes
- Awarded the National Scholarships Scheme "Certificate of Merit" by the Ministry of Education & Culture, Government of India, New Delhi in recognition for the high position secured by me in the XIIth Board Examination, 1978.

Personal Details:

Indian Citizen

Born: 30th December, 1960

My Hobbies:

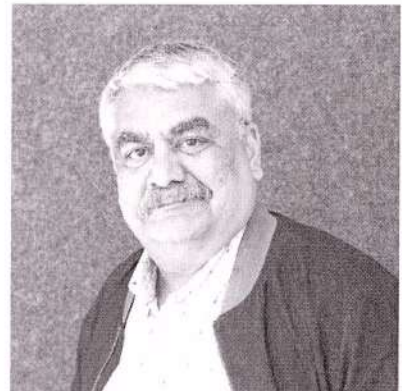
Photography

Dramatics

Jazz

Model railroading

Baking



Affiliation

Assistant Professor
 School of Mathematics
 Thapar Institute of Engineering and Technology, Patiala
 Punjab, India.
 email: amriksen@thapar.edu, phone: +91-9654689477
 Website: <https://amriksen.com>

Education

1. University of Colorado & National Center for Atmospheric Research, Boulder, USA

- **PhD**, Applied Mathematics. (May, 2014)
 - Thesis title: **A Tale of Waves and Eddies in a Sea of Rotating Turbulence**
 (published: https://scholar.colorado.edu/appm_gradetds/46/)
 Modeling and theoretical analysis of nonlinear wave dynamics in fluid flows that involved building massively parallel computational code, visualization modules, analyzing large data and theoretical investigation of data. Thesis resulted in the development of a new wave turbulence theory for rotating helical flows. The thesis involved extensive experience with developing and modifying Large Eddy-Simulation (LES) pseudo-spectral code and DNS code.
- **MS**, Applied Mathematics. (December, 2009)

2. National Institute of Technology, Silchar, India

- **BTech**, Electrical Engineering. (May, 2006)

Awards & Grants

- **Ministry of Science & Technology-DBT Research Grant in Aid**, December 2020, research grant: **42,21,760 INR** as project coordinator (PC) and principal investigator (PI) in charge of a multi-university research grant on developing a COVID pandemic management technology for airborne contamination of hospitals by coronavirus (by *Ministry of Science & Technology*, India)
- **Thapar-Virginia Tech. research consortium Research Grant award**, March 2020, research grant: **25,10,000 INR** as co-principal investigator (co-PI) for developing a mathematical model for hyperthermia induced innate immunity strategy for gastric cancer treatment (by *Thapar-Virginia Tech. joint consortium through Center of Excellence in Emerging Materials*, India)
- **Thapar University Seed Grant award**, October 2020, research grant: **4,50,000 INR** as principal investigator (PI) to construct of a new family of mathematical models to simulate quasicrystal growth (by *Thapar University*, India)
- **DST-SERB Early Career Research Award**, October 2019, research grant: **32,91,520 INR** as principal investigator (PI) to investigate the role of wave turbulence in dispersion of atmospheric pollutants (by *Department of Science and Technology*, India)
- **Fields MITACS fellowship**, summer 2009 (by *Fields Institute & Carleton University*, Canada)
- **Visiting fellowship on fluid turbulence**, summer 2011 (by *Inst. of Theoretical Physics, Cargese, Corsica, France, University of Colorado, Boulder, and NCAR, Boulder*)



Professional expertise

- **Administration:** Member of technical advisory & evaluation committee, for establishing High Performance Supercomputing Infrastructure at Thapar Institute, Patiala; member of School Planning and Policy Committee, School of Mathematics, Thapar Institute, Patiala; organizer of invited lectures series by Dr. Carlos Perelman on special and general relativity at Thapar University, Punjab (September-October 2019).
- **Research:** dynamics of complex systems, asymptotic & complex analysis, singular perturbation theory, fluid turbulence, high-performance computing.
- **Teaching:** probability and statistics (PG), complex analysis (PG), numerical analysis (UG), calculus (UG), differential equations (UG).
- **Teaching Pedagogy:** Certified teacher by the New Directions Program (NDP) and the Advanced Directions Program (ADP), Thapar-Trinity Academic Practice - a joint collaboration between Thapar University and Trinity College, Dublin to contemporize academic activities at Thapar University. NDP and ADP were a three year long academic training program (Fall 2018 to Spring 2021).
- **Industry:** software automation suite development.
- **Post doctoral experience:** California State University, Northridge, CA, USA and Tata Institute of Fundamental Research, Hyderabad, India.

Technical and computing skills

- Programming: competent- **C, Matlab, MPI** (parallel computing), working knowledge- C++, Fortran, Python.
- Software Code Resource Management: **ADELE, GIT**(working knowledge).
- Markup language: **L^AT_EX**.
- Modeling and visualization: **VAPOR, VISIT**.

Professional experience (in reverse chronological order)

Research

Research Publications (in peer-reviewed international journals)

1. **Sen, A.**; and Perelman, C. *A Hamiltonian model of the Fibonacci quasicrystal using non-local interactions: simulations and spectral analysis*, **Eur. Phys. J. B**, 93, 67, 2020.
(indexed in SCI)
2. **Sen, A.** *Anisotropic Wave Turbulence for Reduced Hydrodynamics with Rotationally Constrained Slow Inertial Waves*, **Fluids**, 2, 28, 2017.
(indexed in Web of Science, ACS, Inspec)
3. **Sen, A.**; Aschheim, R.; Irwin, K. *Emergence of an Aperiodic Dirichlet Space from the Tetrahedral Units of an Icosahedral Internal Space*, **Mathematics**, 5, 29, 2017.
(indexed in SCI, SCOPUS, zbMATH)
(appeared as the journal cover page article)



4. Pouquet, A.; **Sen, A.**; Rosenberg, D.; Mininni, P.; Baerenzung, J. *Inverse cascades in turbulence and the case of rotating flows*, **Phys. Scr.** T 155, 014032, 2013.
(indexed in SCI, ACS, SCOPUS, Inspec, MathSciNet, NASA db)
5. **Sen, A.**; Mininni, P.; Rosenberg, D.; Pouquet, A. *Anisotropy and nonuniversality in scaling laws of the large-scale energy spectrum in rotating turbulence*, **Phys. Rev. E** 86, 036319, 2012.
(indexed in SCI, ACS, Inspec)
6. **Sen, A.**, *Analysis of fractal representation of genetic sequences*, Essays in Chaotic Dynamics, Spring 2010, **Technical Report CUCS 106610, Boulder**, ed.: Elizabeth Bradley.
7. **Sen, A.**; Ananthakrishnan, G.; Sundaram, S.; Ramakrishnan, A. G. *Dynamic Space Warping of Strokes for Recognition of Online Handwritten Characters*, **Intl. Jour. of Patt. Recog. and Art. Intell.**, Vol. 23, No. 5, pp: 925-943, 2009.
(indexed in SCI, SCOPUS, CompuMath)

Publications in Conference Proceedings

1. **Sen, Amrik**, et. al., *Hamiltonian wave turbulence theory on the genesis of eddies from waves in rotating flows*, American Geophysical Union, Spring Meeting 2013, Denver, Colorado, USA.
2. **Sen, Amrik**, *Poisson Approximation & its Application in Pattern Matching Problems*, Fields-MITACS meet, School of Applied Probability (Fields Institute & Carleton University, Canada), May 11-21, 2009.
3. Ananthakrishnan, G., **Sen, Amrik**, et. al., *Dynamic Space Warping of Sub-Strokes for Recognition of Online Handwritten Characters*, International Graphonomics Society (IGS2007) 13th IGS conference: 11-14 Nov. 2007, Melbourne, Australia.

Manuscripts in Preparation

1. *Riemann-Hilbert formulation of wave turbulence closure and generalized solutions* (with Carlos Perelman).
2. *Birth and death induced state transitions of swarms*.
3. *Multi-scale characterization of radio-frequency driven plasma antenna* (with Rana Pratap Yadav).

Talks and Poster presentations

- *New Directions Program: Developing Student Centered Learning*, **invited lecture**, Centre for Academic Practices and Student Learning (CAPSL) convention on academic best practices, jointly organized by Thapar University and Trinity College, Dublin, (February, 2020).
- *A Tale of Waves and Eddies in a sea of Rotating Turbulence*, **invited lecture**, Institute of Mathematical Sciences, Chennai, India. (November, 2015).
- *Symmetry breaking and the onset of turbulence in multi-phase flows*, **Institute colloquium**, Tata Institute of Fundamental Research, Hyderabad, India. (August, 2015).
- *Hamiltonian wave dynamics on the genesis of eddies from waves in rotating flows*, **Dynamics Days conference**, Denver, USA. (January, 2013).
- *Inverse Cascades at Small Rossby Number*, **Theme Of the Year (TOY) conference**, jointly organized by Univ. of Colorado, Boulder & NCAR, Boulder, USA. (May, 2012).
- *Physics of rapidly rotating fluid flow with helical forcing at small scales*, ANISO 2011 on *Morphology and dynamics of anisotropic flows*, **Institute of Theoretical Physics, Cargese**, Corsica, France. (July, 2011).



- *Flow past an airfoil via conformal mapping and elliptic grid generators*, Computational mathematics seminar, **Dept. of Applied Mathematics, University of Colorado, Boulder, USA.** (November, 2010).
- *Poisson Approximation and its Application in Pattern Matching Problems*, Fields-MITACS Summer School in Applied Probability, School of Mathematics and Statistics, **Carleton University, Ontario, Canada.** (May, 2009).

Research projects

- Current research (in progress) - Gravity-Fluid correspondence with Carlos Castro Perelman.
- Current research (in progress) - Hamiltonian dynamics of aperiodic complex systems: theoretical development and testing of the scientific project is complete in one dimension. This included developing a novel mathematical model based on statistical mechanics and Hamiltonian framework, developing a Monte-Carlo simulation code on a cluster computing node and rigorous verification modules. Current work on two dimensions shows promising general results. The results will be published in a top tier international journal soon.
- Current research (in progress) - Extension of swarming and flocking models from two dimensions to three dimensions. Comprehensive results will be published soon in a top tier international journal.
- Sr. Research Scientist and manager - Quantum Gravity Research, Los Angeles, CA, (January 2016 - present, also consultant from September - October 2015)
 - project: **Mathematical physics modeling** - I am currently leading a project on a Hamiltonian model for fluids on aperiodic lattices. This project involves both analytical (statistical physics) as well as developing computational code using Monte Carlo methods. The second project involves developing a connection between unification physics models like E_8 , E_6 and $SU(5)$ gauge theories with a three dimensional quasicrystalline substrate using techniques from representations of Lie Algebra and Clifford algebra spinors.
 - project: **Modeling of synchronized tunneling** - Mentoring and supervising a team working on modeling synchronized correlated tunneling using the coupled Gross-Pitaevskii equations. Tasks involve creating project proposals and roadmap for the project and explaining the strategy to the team members to build the computational model.
- Post-doctoral scientist - Tata Institute of Fundamental Research, Hyderabad, (April, 2015 - November 2015)
 - project: **multi-phase flow dynamics** - Analysis of multi-phase flow dynamics that involved quantitative study of the onset of turbulent motion by investigating spontaneous symmetry breaking in the phase field geometry. The work involved a novel reduced model derivation based on multi-scale perturbation theory to study scaling law behavior of concentration field and kinetic energy. The computational aspect of the project was based on building on a CUDA code for binary fluid mixtures.
- Post-doctoral scientist - The University Corporation and California State University, Northridge, Los Angeles, (April, 2014 - February 2015)
 - project: **mathematical modelling of swarming patterns** - Developed a software suite to model the kinematics of self-organizing swarming agents in C programming language. Visualization modules were built to display the swarming motion dynamic. The novelty in the model stems from the fact that real time birth and death mechanisms have been incorporated in the kinetic model. The nature of phase transition in the swarming states on account of the



dynamic perturbations induced by the regenerative mechanism are currently under investigation.

- Visiting research scholar - Lab. for Atmospheric and Space Physics, Boulder, Colorado, (*January-March, 2014*)
 - project: **fundamental investigation of planet formation** - preliminary investigation on the theory of planet-planet gravitational wave interaction and obtained fundamental understanding of how these interactions affect planetary orbital ellipticity and migration of planetoids.
- Intern - Research & Development (software), CGM Development Team, **Dassault Systèmes Inc.** (*June-November, 2013*).
 - project: **instrumentation and development of geometric modeling kernel.** Developed an automatic software suite in Python that is integrated with the geometric modeling software pool. The Python suite was based on the MediaWiki software and was geared towards maintaining a fully-automated documentation of *live code snippets* of the CGM development code. This project involved working on both windows and linux platforms.
- Graduate research assistant
 - project: **Hamiltonian wave turbulence theory**, dept. of Applied Mathematics, **University of Colorado, Boulder** (*Summer 2012 - June 2013*), sponsor: NSF.
 - project: **analysis and modeling of rotating turbulent flows**, **National Center for Atmospheric Research (NCAR)**, Boulder, Colorado (*January 2011 - June 2013*), sponsor: NSF, CMG.
 - project: **Wind tunnel experiments on airfoil, ITLL, University of Colorado, Boulder**, conducted laboratory experiments on boundary layer analysis of different air foil shapes in a wind tunnel, Fall 2010, supervisor: Trudy Schwartz.
 - project: **pattern matching in genetic sequences**, dept. of Applied Mathematics, **University of Colorado, Boulder** (*Summer 2009*).
 - project: **implementing SVM machine learning algorithm to real time pattern recognition**, machine learning graduate project, CU Boulder, (*Spring 2008*).
 - project: **developing models in econometrics with the Bellman equation for stock prediction**, dept. of Economics, **University of Colorado, Boulder** (*Spring-Summer 2007*).
- Research engineer, Dept. of Electrical Engineering, **Indian Institute of Science (IISc)**, Bangalore (*June 2006 - June 2007*).
 - project: **online handwritten recognition**, sponsors: MHRD, India. The project involved developing algorithms in image processing and pattern recognition. Mentor: Dr. A. G. Ramakrishnan.

Simulation and visualization modules

Visualization of high performance simulation modules developed by me are available on my youtube channel: <https://www.youtube.com/user/amriksen>

- Fluid turbulence
 - https://www.youtube.com/watch?v=7tYiL9_RRvw
 - <https://www.youtube.com/watch?v=uV9a9B8iwpM>
 - <https://www.youtube.com/watch?v=FebFayDhnJY>
- Multi-phase flows
 - <https://www.youtube.com/watch?v=bsjS010rQa8>



- Self organizing complex systems in biology
<https://www.youtube.com/watch?v=FAOvr-fqFxo>
https://www.youtube.com/watch?v=_KiP_n6oTUI
https://www.youtube.com/watch?v=YIOEao__mq0
<https://www.youtube.com/watch?v=peuhuRmCChA>
- Complex systems and aperiodic order
<https://www.youtube.com/watch?v=MirQPchbo7Q>
https://www.youtube.com/watch?v=N85_aDD_1UI

Independent projects

- *A parallelized suite for Lagrangian particle dynamics in a 2D field using domain decomposition.*

Teaching

- **Instructor of Mathematics and Statistics for UG and PG courses at Thapar University**
 - Design and development of PG statistics course with computer aided laboratory experiments with diverse applications in engineering sciences and social sciences. Development of PG course on complex analysis and conducting lectures on this course for two academic years. Delivered lectures for several UG courses, development of course content and examination material, grading and evaluation of answer scripts, analysis of student performance and learning outcomes.
- **Instructor of special topics course for scientists**
 - Developed a comprehensive course on **Clifford Algebra** for senior scientists at Quantum Gravity Research. Lectures were delivered weekly as a special topics course during summer 2016. This project involved additional responsibility as part of continued program development scheme at Quantum Gravity Research and included coordinating academic consultation with offsite scientists.
 - Coordinated lecture series by eminent scientist Prof. Carlos Perelman on Lie Algebra at Quantum Gravity Research. This included working with the lecturer on developing a curriculum and facilitating the lecture delivery on site. These lectures are available on the Quantum Gravity Research youtube channel (link available upon request).
- **Instructor of Mathematics**
 - Course: **Vector calculus** (at **Univ. of Colorado, Boulder** during summer semester 2010) - responsibilities included lecturing a 5 credit hour course, re-designing a regular semester course work to suit a 7 week summer program, constructing a typographical booklet in \LaTeX for the course that included well organized lecture notes (available on request), writing exams and creating grading schemes for the summer program and co-ordinating with the laboratory instructor for designing project models for the course.
 - Course: **Probability and statistics** (at **Front Range Community College** during summer semester 2010) - lecturing a 5 credit hour course to nursing graduates, writing exams and creating grading schemes.
 - Course: **Calculus for engineers and scientists** (at **Front Range Community College** during fall semester 2010) - lecturing a 5 credit hour course to freshmen and sophomore years students, writing exams and creating grading schemes.



- **Laboratory designer for dynamical systems**
 - Course: **Differential equations using linear algebra** - *designed 2 new labs for the undergraduate dynamical systems course, the labs were modeled on chaos in nonlinear dynamics and modeling an integrated radio tuner using ordinary differential equations and tested on a thorough parameter study of the models (the labs are available on the course archive and also available on request). The newly designed labs were also tested as lab projects during regular semesters.*
- **Teaching Assistant**
 - Courses: Calculus 1, Calculus 2, Calculus 3, Differential equations and linear algebra (Dept. of Applied Mathematics, **University of Colorado, Boulder** from August 2008 to December 2013) - *responsibilities included lecturing a 1 credit hour recitation class weekly, grading homeworks and tests and conducting exam reviews.*
- **Tutor**
 - Courses: **physics and mathematics** (at **Student Academic and Success Center, Univ. of Colorado, Boulder**) - *tutored undergraduate students in freshmen and sophomore years.*
 - Courses: **physics and mathematics** (at **Skyline high school, longmont, CO** during fall 2013) - *tutored high school students for their advanced placement tests.*

References

- **Dr. Carlos Perelman**, Theoretical physicist, Clark Atlanta University, Georgia and Ronin Institute, New Jersey, USA.
webpage: https://es.wikipedia.org/wiki/Carlos_Castro_Perelman
voice: 805-745-8151;
email: perelmanc@hotmail.com
- **Dr. Michael Wride**, Lead educator of Transformative Pedagogies, Centre for Transformative Learning, University of Limerick, Ireland.
webpage: <https://www.ul.ie/ctl/dr-michael-wride>
Formerly with Trinity College, Dublin as lead academic developer for Centre for Academic Practices and Student Learning (CAPSL), Thapar University, Punjab.
voice: +353-87914-3581;
email: michael.wride@ul.ie
- **Dr. Tom Manteuffel**, Professor, Dept. of Applied Mathematics, CU Boulder, 80309.
webpage: <http://grandmaster.colorado.edu/~tmanteuf/>
voice: 303-492-5199;
email: tmanteuf@colorado.edu



Dr. AMRUTA RANJAN BEHERA

MEMS Lab, Center for Nanoscience and Engineering,
Indian Institute of Science, Bangalore - 560012, India
725-995-9069 amruta@iisc.ac.in

EDUCATION

| | |
|-----------|--|
| 2012-2020 | M.Sc. (Engg.) & Doctor of Philosophy from Center for Nanoscience and Engineering, Indian Institute of Science, Bangalore, Karnataka |
| 2006-2010 | Bachelor of Technology in Mechanical Engineering, National Institute of Technology, Warangal, Andhra Pradesh |

PUBLICATIONS

Journals

1. **A. R. Behera**, A. Kumar, H. Suresh, M. Pratap, S. K. Selvaraja, and R. Pratap, "An ultra-portable Vis-NIR spectrometer with an integrated light source for chemometric applications", Journal of the Electrochemical Society, Volume 167, Number 16, 167515, 2020. |IoT
2. H. Suresh, **A. R. Behera**, S. K. Selvaraja and R. Pratap, "Quantification of Curcuminoids in Turmeric Using Visible Reflectance Spectra and a Decision-Tree Based Chemometric Approach", Journal of the Electrochemical Society, Volume 167, Number 16, 167528, 2020. |AI/ML
3. **A. R. Behera**, H. Shaik, G. M. Rao, R. Pratap, "A technique for estimation of residual stress and Young's modulus of compressively stressed thin films using microfabricated beams", IEEE Journal of Microelectromechanical Systems, vol 28, Issue 6, 2019. |MEMS
4. **A. R. Behera**, A. Dangi, and R. Pratap, "An experimental study of residual stress induced modulation of vibration characteristics in 1-D MEMS resonators", ASTM J. Mater. Perform. Charact., vol. 7, no. 4, ISSN 2379-136, 2018. |MEMS

Conferences

5. H. Suresh, **A.R. Behera**, S. K. Selvaraja, and R. Pratap. "Comparison of Chemometric Models for Quantification of Total Curcuminoids in Powdered Turmeric Using Visible and Near Infrared Spectra", Accepted, 239th ECS Meeting with the 18th International Meeting on Chemical Sensors (IMCS), May 30-June 3, 2021. |AI/ML
6. Naveena N.L., **Amruta R Behera**, Rudra Pratap. "Near-infrared spectral sensing technique for detection of Lasioderma serricorne infestation in stored roasted Bengal gram." International Virtual Conference on Emerging Trends in Food Protectants and Infestation Control, 24-25 Feb 2021, CSIR-CFTRI, Mysuru, Karnataka, India. |IoT
7. **A.R. Behera**, H. Suresh A. Kumar, S. K. Selvaraja, and R. Pratap. "Detection of spent turmeric adulteration in powdered Curcuma longa using Vis-NIR spectroscopy and machine learning", Accepted, IEEE International conference on emerging electronics, 2020, New Delhi, India. |AI/ML
8. H. Suresh, **A.R. Behera**, S. K. Selvaraja, and R. Pratap. "Evaluation of a miniaturized NIR spectrometer for estimating total curcuminoids in powdered turmeric samples", Accepted, IEEE International conference on emerging electronics, 2020, New Delhi, India. |IoT
9. H. Suresh, **A. R. Behera** and R. Pratap, "A Chemometric Study of Vis-NIR Reflectance Spectra of Turmeric Powders to Quantify Total Curcuminoids", ECS Meeting Abstracts, Volume MA2020-01, IMCS 01: Artificial Intelligence, Machine Learning, Chemometrics, and Sensor Arrays, 2020. |AI/ML
10. **A. R. Behera**, A. Kumar, H. Suresh, M. Pratap and R. Pratap, "An Ultra-Portable Vis-NIR Spectrometer with an Integrated Light Source for Quality Analysis of Food and Agricultural Produce", ECS Meeting Abstracts, Volume MA2020-01, IMCS 04: Sensors for Agricultural and Environmental Applications, 2020. |IoT
11. **A. R. Behera**, R. Pratap, "Experimental demonstration of the super stable second mode excitation in buckled micro-beams", 64th Congress of Indian Society of Theoretical and Applied Mechanics (ISTAM 2019), December 9-12, 2019, PID 309. |MEMS



12. **A. R. Behera** and R. Pratap, "On the threshold of stress invariant second mode excitation in buckled MEMS resonators", IEEE Sensors, 2018, DOI: 10.1109/ICSENS.2018.8589902. |MEMS
13. R. Pratap, **A. R. Behera**, "Simultaneous Determination of Young's Modulus and Residual Stress in PECVD a-SiC from Postbuckling Vibration of MEMS Beams", The Electrochemical Society, ECS Transactions, 86 (16) 87-100 (2018). |MEMS
14. **A. R. Behera**, H. Shaik, G. M. Rao, R. Pratap, "Experimental investigation of dynamic characteristics of metal coated buckled micro-beams with electrothermal modulation of residual stress", IEEE International conference on emerging electronics, 2018, Bengaluru, India. |MEMS
15. **A. R. Behera** and R. Pratap, "A Study of Higher Modes of Buckled SiC Beams for Stress Based Sensing Applications", The 30th-anniversary Eurosensors Conference – Eurosensors 2016 4-7 September 2016, Budapest, Hungary. |MEMS
16. R. Pratap, A. Dangi, and **A. R. Behera**, "Effect of Microfabrication Induced Stresses on the Sensing Characteristics of Dynamic MEMS Devices", ECS PRIME 2016, Honolulu, Hawaii. |MEMS
17. N.L. Naveena, **A. R. Behera**, R. Pratap, and K. Chaitanya, "Nanotechnology for management of infestations and grain quality monitoring", Conference on agriculture under climate change, threats, strategies, and policies, 2017. P 160-167. |IoT

WORK EXPERIENCE

| | |
|--------------|---|
| 2010-2012 | Mechanical Design Engineer at <u>Applied Materials India Private Ltd</u> , Bangalore, Karnataka |
| 2018-Present | Consultant for development of educational content at <u>Wolfram Research Inc.</u> |
| 2020-Present | Post-doctoral fellow at Center for Nano Science and Engineering, Indian Institute of Science, Bangalore. |

TEACHING and MENTORING

1. I worked as a teaching assistant for the course Mechanics of Microsystems taught by Prof. G.K. Ananthasuresh for one semester.
2. I have guided four summer interns during my stay at CeNSE, IISc, Bangalore.
3. I have been leading a team involved in product development for a project funded by the Office of the Principal Scientific Advisor to Govt. of India.

INTERNSHIPS

| | |
|-------------|---|
| 2011 | Training program on mechanical manufacturing processes at Nettur Technical Training Foundation, Bangalore. |
| 2009 & 2010 | Built two All-Terrain Vehicles to represent NIT Warangal in SAE BAJA 2009 and 2010 racing competitions held at Pithampur, Madhya Pradesh. |
| 2009 | Summer project on " Minimization of warpage due to high-speed machining in Aluminum alloys " at Hindustan Aeronautics Limited, Avionics Division, Hyderabad, Andhra Pradesh. |
| 2008 | Summer project on " Takt time reduction of cylinder block line " at Maruti Suzuki India Ltd, Gurgaon, Haryana. |
| 2007 | Internship at Indian Railway's Electrical Loco Workshop at Visakhapatnam, Andhra Pradesh. |

PROJECTS

1. Development of a handheld sensing system for quantification of curcumin in turmeric powder. (Ongoing)
2. Developed a Mathematica based application for predicting the proportion of chemical bonds in an amorphous silicon carbide thin film system using the free-energy model.
3. Building a working model of atomic force microscope using LEGO Mindstorms robotic kit.
4. Building a demonstration model for MEMS gyroscope using Arduino board.
5. Theoretical modelling of a self-adaptive oscillator.



TECHNICAL SKILLS

| | |
|---------------------------------|--|
| Area of research | <ul style="list-style-type: none">• Machine learning models for chemometric applications• Post-buckling behavior of fixed-fixed microbeam resonators• Thin-film deposition and their characterization• Fabrication and characterization of micromechanical structures |
| Statistics and Machine Learning | Wolfram Language/Mathematica, Unscrambler |
| Programming | Mathematica, MATLAB, Maple |
| Equipment expertise | Laser Doppler vibrometer, Optical profilometer, Atomic force microscope, Scanning electron microscope, Surface profilometer, Ellipsometer, Plasma enhanced chemical vapour deposition, Reactive ion etching, Mask aligner, Optical spectrometer, High performance liquid chromatography |
| FEM Simulation | ANSYS, COMSOL |
| 3D Modelling | Unigraphics, CATIA, Solidworks |

AWARDS and RECOGNITIONS

| | |
|------|--|
| 2021 | Received the best poster presentation award in the International Virtual Conference on "Emerging Trends in Food Protectants and Infestation Control (ET-FPIC 2021)" held at CSIR-CFTRI, Mysore, on 24-25 th February 2021. |
| 2020 | Led a team that was positioned among the top 10 teams selected out of the 963 teams that participated in the national level event <u>Data Innovation Bazar 2020</u> organized by Western Digital , India, in partnership with Startup India and Invest India . |
| 2019 | An SEM image from my research was selected by the <u>Oxford Instruments'</u> Plasma Technology Group for display in their <u>online gallery</u> . |
| 2019 | Selected for participating in the <u>Shell NXplorers</u> workshop. |
| 2018 | Delivered an invited talk at Nitte Meenakshi Institute of Technology, Bangalore, as part of their faculty development program. |
| 2018 | Received the best manuscript award in the 4 th IEEE International Conference on Emerging Electronics , 16-19 th Dec 2018, Bengaluru. |
| 2016 | Led a team to be in the 25 top finalists in the <u>GE Edison Challenge 2016</u> organized by GE India Technology Centre. |
| 2016 | Selected to represent IISc as part of the 6-membered team in the AIRBUS Group's "Link the Top" initiative, which involved travel to NUS, Singapore, ISAE, Supaero, France, Airbus helicopters in Singapore, and Airbus manufacturing facility in Toulouse, France. |
| 2014 | Nominated to participate in the <u>Third Summit of South Asian Science Academies and AASSA (Association of Academies and Societies of Sciences in Asia) General Assembly</u> held at the National Science Academy, Delhi. |
| 2014 | Nominated to participate in the <u>India-Trento program for Advanced Research workshop on N/MEMS Sensing for Chem, Bio and Agriculture Applications</u> held at IIT Bombay, Mumbai. |
| 2010 | Received Discover Award from Applied Materials for best learning in the project during "New College Graduates onboarding program". |
| 2008 | Awarded the First Prize in the " Design of Mechanism " competition held during the annual technical festival "TECHNOZION-08" of NIT Warangal. |
| 2008 | Awarded the Third Prize in " Task Completion " - a mechanical design competition held during the annual technical festival "TECHNOZION-08" of NIT Warangal. |
| 2004 | Achieved 14th Rank in " State Level Chemistry Olympiad " organized by "Orissa Chemical Society". |



Dhiraj Sinha

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Brief Profile

A research scientist with extensive experience in conception, design, simulation, prototyping and test of antennas and MEMS sensors; skilled in developing mathematical models of physical problems and designing experiments; significant experience in microfabrication, antenna prototyping and test in anechoic chamber; experienced in accessing market prospects and drafting patents for inventions; generated research funding from government and private institutions on novel research ideas worth US \$800,000.

Education

| | |
|--|------------------------------------|
| University of Cambridge <i>Ph.D. in Electrical Engineering</i> | Cambridge, UK 2004–2009 |
| ENST de Bretagne <i>Certificat des études Spécialisées (Telecommunication)</i> | Brest, France 2000–2002 |
| Institute of Engineering and Technology <i>B.Tech. in Electrical Engineering</i> | Lucknow, India 1995–1999 |

Research Experience

Massachusetts Institute of Technology **Cambridge, USA**
Postdoctoral Associate, Department of Civil & Environmental Engineering *Sept. 2018–Present*

- Water Quality Monitoring Through Optical Spectroscopy

The work is in collaboration with Senseable City Lab of MIT on early detection of algal bloom in water bodies using optical spectroscopy and its integration with autonomous boats.

Massachusetts Institute of Technology **Cambridge, USA**
Postdoctoral Fellow, Department of Electrical Engineering & Computer Science *Sept. 2017–Sept. 2018*

- Metal Detection in Biological Systems Using Magnetic Resonance Spectroscopy

We collaborated with the Department of Material Science at MIT on development of an ultra-small MRI test set up aimed at detecting metals for disease diagnosis in biological systems using thin film antennas. We were able to prove that low power pulses of radio signals can be detected by cantilever based receivers.

Singapore University of Technology and Design, Singapore **Singapore**
Research Fellow, Department of Engineering Product Development *Aug. 2015–Sept. 2017*

- Electromagnetic Field Sensing Using Antennas for Material Diagnosis

The work led to the discovery of Raman like effect at radio frequencies using antennas for material diagnosis. The results were published in the Journal of Applied Physics and were instrumental in generating research funding from Keysight Technologies, Singapore worth US \$590,000 for identification of open circuit and short circuit conditions in electronic circuits.

University of Cambridge, UK **Cambridge, UK**
Research Associate, Division of Electrical Engineering *March 2009–Aug. 2010*

- Led a team of researchers in conception, simulation, design and development of a radio frequency energy harvester using ultra small piezoelectric antennas (Funded by Nokia Research Centre, Cambridge).
- The work established that RF energy capturing could lead to an increase in battery life by 3 to 5%.



1/6

University of Cambridge, UK*Graduate Student, Division of Electrical Engineering***Cambridge, UK***Sept. 2004–Feb. 2009*

- Thesis: Radio Frequency Magnetic Field Detection Using Piezoelectric Material Incorporating a Microcantilever
- Developed microsystem measurement lab from scratch and carried out fabrication of microstructures, developed control circuit, performed simulations and measurements on the dynamics of microstructures and electromagnetic coupling with radio waves.
- The work resulted in ultra-sensitive magnetic field sensors which detected picotesla level magnetic fields at room temperature conditions. It led to two Journal publications.
- Awarded research grant from the Defence Science and Technology Labs, the Ministry of Defence, UK for feasibility study of Nuclear Quadrupole Resonance for material diagnosis worth GBP 30,000.

Infineon Technologies, Germany*Student Intern***Munich, Germany***July 2002–Nov. 2002*

- Worked on a tool in VC++ to create an interface between Labview and an IC testing software using Active-X Automation interface.
- The software enhanced the user capabilities of a software on IC tests at Infineon Technologies.

Paul Scherer Institute, Switzerland (A Swiss Federal Laboratory)*Student Intern***Villigen, Switzerland***July 2000–Sept. 2000*

- Implementation of transfer matrix formalism in a C++ code for calculation of the energy momentum in nanostructure.
- The work involved a collaboration with researchers working on nanofabrication of the world's first silicon-germanium laser.

ENST de Bretagne, France*Student***Brest, France***July 2000–Sept. 2002*

- Thesis: Digital transmission analyser for analysing error in communication (implemented in VHDL).
- The work was used in developing a commercial prototype of a device for test of digital devices.

Industrial Experience**Oscion, India***Technology Consultant***Greater Noida, India***July 2013–July 2015*

- Technical Consultancy on projects in the field of measuring structural reliability using radio frequency systems and antennas

Led a team of professionals on projects on the application of RF technology on measuring reliability of infrastructure like power lines and pipelines. It also comprised of preparing technical reports on emergent engineering challenges for industrial clients.

- Low cost counterfeit medicine detection technology

Developed a low cost laboratory prototype of technology on counterfeit medicine detection using evanescent modes of antennas for use at the point of sale.

Smantenna Ltd., UK*Founder and Research Engineer***Cambridge, UK***Sept. 2010–March 2013*


- Design, simulation, fabrication and development of antennas using piezoelectric material
The work carried out in collaboration with Antenova Ltd., Cambridge, resulted in miniaturisation of GPS antennas by a factor of three and led to two patent filings. We raised seed funding in the range of US \$120,000 for the company [Transferred to India in Feb. 2012].
- Discovery of explicit symmetry breaking mechanism of electromagnetic radiation
The research led to the development of a unifying theme in radiation from diverse structures ranging from metallic to dielectric materials. It was published in Phys. Rev. Lett. and was covered by more than hundred news portals including IEEE Spectrum, Phys.org and Nikkei.
- Test of railway track monitoring technology using microsystems for Network Rail, UK
It established the feasibility of using MEMS based sensors for railway track monitoring. The work was published in IEEE Sensors Journal.

Teaching

Singapore University of Technology and Design, Singapore

Singapore

Teaching Assistant

Aug. 2016–Sept. 2017

- Assisted the faculty member in course work for Electromagnetic Field Theory (Class size of 40).
- Supervised students in projects on application of electromagnetism in biomedical engineering.

University of Cambridge, UK

Cambridge, UK

Student Supervisor

Oct. 2005–March. 2009

- Organized tutorial sessions on Radio Frequency Electronics, Control System, Photonics and Integrated Analog Electronics at Cambridge University over a period of 7 terms (Class size of 3).
- Organized undergraduate laboratory sessions on Analog Electronics and Control System at Cambridge University over a period of 7 terms.

Uttar Pradesh Technical University, India

Lucknow, India

Lecturer

Jan 2003–Sept. 2004

- Taught courses in Electromagnetic Field Theory, Mobile Communication and Electrical Engineering Materials besides organizing undergraduate labs in circuits and control system (Class size of 40).
- Developed a lab on microwave measurements for undergraduate experiments.

Additional Teaching Assignments

- Taught courses in Digital Communication and Analog Electronics to Masters Students besides organizing labs at Galgotias University, Greater Noida, between Feb 2012–Aug. 2012 (Class size of 50).
- Taught courses in Control System and Circuit Theory to undergraduates at Sharda University between July 2013–Dec. 2014 (Class size of 50)

Technical skills

- **RF Instrumentation:** Experience with use of Network, Spectrum Analyser & antenna tests in anechoic chamber and data acquisition using Labview
- **Microfabrication:** Mask design, Photolithography, Vapour deposition, Dry and Wet Etching
- **Simulation:** Proficient in simulation using, Comsol, HFSS, CST, ANSYS and Matlab
- **Circuit Design:** Skilled in VHDL, Eagle, Altima, PSpice (Familiarity with design of PLL, Mixer, Filter, Amplifier and related systems)
- **Programming Languages:** C, C++
- **Software Packages:** Mathematica, Origin, HTML, Latex, Adobe Illustrator, Photoshop, MS office
- **General Business Skills:** Experience in writing business plans and grant proposals, pitching before investors, drafting patent applications in accordance with EU and US laws, skilled in managing an entrepreneurial venture



3/6

Publications

Book

- o **Dhiraj Sinha**, Gehan Amaratunga, "Explicit Symmetry Breaking in Electrodynamical Systems and Electromagnetic Radiation," Morgan Claypool, Institute of Physics UK Publishing, 2016.

Journal Papers

1. **Dhiraj Sinha**, "Phase Space Trajectories Generated Under Coupling Between a Dynamic System and a Thermal Reservoir," *Journal of Physics Communications (An Institute of Physics Journal)* (in Press) .
2. **Dhiraj Sinha**, J. Rajadas "Generation of Acoustic-Brownian Noise in Nuclear Magnetic Resonance Under Non-Equilibrium Thermal Fluctuations," *Scientific Reports (Springer Nature)* (Final stage of revision).
3. **Dhiraj Sinha**, "Loss of Invisibility in Metamaterials under Thermal Fluctuation Induced Radiation," *Annalen der Physik*, 531, 4, 1970019 (2019) (Impact factor 3.276) [Featured on the cover page of Journal].
4. **Dhiraj Sinha**, Gehan Amaratunga, "The Noether Current in Maxwell's Equations and Radiation under Symmetry Breaking," *Philosophical Transactions of the Royal Society A*, 376, 20170452 (2018) (Invited paper Celebrating 125 years of Oliver Heaviside's 'Electromagnetic Theory': Physical Sciences Papers and Historical Perspectives) [Impact Factor: 3.093].
5. **Dhiraj Sinha**, Omkar, "Falling Object Detection in Railway Track through Rayleigh Wave Sensing Using Laser Vibrometer," *IEEE Transactions on Vehicular Technology*, 67, 9158 (2018) [Impact Factor: 5.339].
6. **Dhiraj Sinha**, "Spectral Symmetry Breaking of Electro-Acoustic Noise in Ferroelectric Materials," *Journal of Applied Physics*, 124, 4, 044103 (2018) [Impact Factor: 2.328].
7. **Dhiraj Sinha**, Roland Bouffanais, and Shao Ying Huang, "Nonequilibrium Dielectric Noise in Solids in the Presence of Modulation of Electrical Permittivity and Spectral Symmetry Breaking Under Feedback," *New Journal of Physics*, 19, 11, 113050 (2017) [Impact Factor: 3.773].
8. **Dhiraj Sinha**, "Wireless Actuation of Piezoelectric Coupled Micromembrane Using Radio Frequency Magnetic Field for Biomedical Applications," *Journal of Applied Physics*, 121, 134501 (2017) [Impact Factor: 2.328] [Featured on the cover page of Journal].
9. **Dhiraj Sinha**, Shao Ying Huang, "Selective polarization of Dielectric Materials Under Electromagnetic Scattering at radio Frequency," *Journal of Applied Physics*, 120, 074101 (2016) [Impact Factor: 2.328].
10. **Dhiraj Sinha**, Farhan Feroz, "Obstacle Detection on Railway Tracks Using Vibration Sensors and Signal Filtering Using Bayesian Analysis," *IEEE Sensors Journal*, 16, 642, (2016) [Impact Factor: 3.076].
11. **Dhiraj Sinha**, Gehan Amaratunga, "Electromagnetic Radiation Under Explicit Symmetry Breaking," *Physical Review Letters*, 114, 147701 (2015) [Impact Factor: 9.227][Covered by more than 100 news portals including IEEE Spectrum and Nikkei Electronics, the biggest media house for electronics in Japan].
12. **Dhiraj Sinha**, Gehan Amaratunga, "Reply to Comments on Electromagnetic Radiation Under Explicit Symmetry Breaking," *Physical Review Letters*, 114, 147701 (2015).
13. **Dhiraj Sinha**, "Entropy Changes in a Thermodynamic System Under Potential Gradients," *Physica A: Statistical Mechanics and its Applications*, 416, 676 (2014) [Impact Factor: 2.132].
14. **Dhiraj Sinha**, Simone Pisana and Andrew J. Flewitt, "Radio Frequency Magnetic Field Detection Using Piezoelectric Coupled Microcantilevers," *Smart Materials & Structures*, 20, 025016 (2011) [Impact Factor: 2.963]. (The first author is also the corresponding author in all the papers)

Papers Under Review

1. **Dhiraj Sinha**, "Theoretical Limits on the Application of Kramers Kronig Relations in Electrodynamical Systems," *Nature Photonics* (Second stage of review: Submitted in November, 2018).
2. **Dhiraj Sinha**, "Electromagnetic Radiation Under Phase Symmetry Breaking in Quantum Systems," *Journal of Physics A: Theoretical and Mathematical* (First stage of review).
3. **Dhiraj Sinha**, "Acoustic Magnetic Resonance Spectroscopy of Hydrogen Nuclei in Fluid," *Physica A* (First stage of review).
4. **Dhiraj Sinha**, "The onset of Irreversibility Under Symmetry Transformation of Conserved Noether Current," *Physica A: Statistical Mechanics and its Applications* (Second stage of review).
5. **Dhiraj Sinha**, "Carathéodory's Axiomatic Formulation of Thermodynamics, Adiabatic Accessibility and its Relation



to Lieb-Yngvason and Clausius Entropy, " Physical Review Letters (A revised draft is being sent after two stages of review: Initially submitted in June 2018).

6. **Dhiraj Sinha**, Roland Bouffanais "Entropy Changes in Crystalline Material Under Phase Transition and Symmetry Breaking," Annals of Physics (First stage of review: Submitted in November 2018).
7. **Dhiraj Sinha**, "Generation of Turbulence Under Phase Symmetry Breaking in Fluid-Structure Interaction," Proceedings of the Royal Society A (First stage of review).

Working Manuscripts

1. **Dhiraj Sinha**, "Heat to Work Transformation Under Non-Equilibrium Thermodynamic Coupling Through an Asymmetric Field," (Went through two rounds of review at Proceedings of the Royal Society A).
2. **Dhiraj Sinha**, "Theoretical Challenges in Cherenkov Radiation Under the Framework of Tamm's Model".
3. **Dhiraj Sinha**, "The Origin of Time Varying Electrodynamical Field in Vavilov-Cherenkov Radiation," (Went through two stages of review at Phys. Rev. Lett.).
4. **Dhiraj Sinha**, "Antenna Miniaturization Using Piezoelectric Materials."
5. **Dhiraj Sinha**, "Electromagnetic Induction under Spatial Symmetry Breaking of Magnetic Flux Density."
6. **Dhiraj Sinha**, Andrew Whittle "Optical Fluorescence Spectroscopy of Photosynthetic Pigments under Thermal Fluctuations."

Conference

1. **Dhiraj Sinha**, Shao Ying Huang, "Miniaturized MRI System for Diagnosis of Samples of Low Physical Dimensions using Piezoelectric Receiver and Transmitter," International Society for Magnetic Resonance in Medicine, Annual Meeting (2016).
2. **Dhiraj Sinha**, Shao Ying Huang, "Antenna Miniaturisation using Piezoelectric Material Based Thin Film Antenna for Body-centric Wireless Communication," IEEE International Symposium on Radio-Frequency Integration Technology, Taipei (2016).
3. **Dhiraj Sinha**, "Electromagnetic Field Oscillations in Nucleic Acid Strand," Frontiers in Optics/Laser Science, OSA (2007).

Patents

1. Stability Measurement and Display Device (Patent no. GB 1911832.2) (Negotiations on licensing are at a key stage with a leading car company).
2. Microantenna Device (PCT No. PCT/GB2008/003800).
3. MEMS and Liquid Crystal based Optical Switches (United States Patent & Trademark Offices, 2004, Application serial no. 10/649129).

Awards

1. Co-investigator in Research Grant worth SGD 800,000 (US \$590,000) from Keysight Technologies, Singapore on Fault Diagnosis in Circuits and Devices using Antennas (2017).
2. Co-investigator in SMART Research Grant worth SGD 50,000 (US \$37,000) from Singapore MIT Alliance for Research and Technology on thin film piezoelectric antennas (2017).
3. Research Grant from East of England Development Agency Grant worth GBP 30,000 for development of ultra-small antennas (Ref. 8120, Aug. 2010) with investment worth GBP 40,000 from Cambridge Angels.
4. London Business School Business Idea Competition-2009 (GBP 10,000) and Imperial College Business Idea Competition-2009 (GBP 2,000); Cambridge Angels & ARM Prize for entrepreneurship-2008 (GBP 10,000).
5. Research grant on "MEMS based NQR for Detection of Materials" from the Ministry of Defence, UK worth GBP 30,000 (Contract no. RD028-08228, 2007).
6. Wingate Scholarship (GBP 21,000) and Cambridge Commonwealth Trust Scholarship (GBP 24,000) for doctoral studies at the University of Cambridge (2005-07), Eiffel Scholarship (22,000 Euros) from Egide (French Govt.) for studies in France(2000-2002).
7. Parmee Prize for entrepreneurship worth GBP 1000 (2007) at Pembroke College, Cambridge and Scientific Instrument Makers Award worth GBP 1000 (2005) at Cambridge University Engineering Department



8. Nominated by Varsity, Cambridge University Students magazine, as one of the most talented students (2008-2009).
9. Nominated by MIT's Technology Review for under 35 top Innovators award in 2009 (Nomination withdrawn as the technology was at an initial stage and had not been subjected to a rigorous peer review process and tests).

Presentations

- "Broken Symmetries in Radiating Structures and Antenna Miniaturization for Biomedical Sensing", Martinos Centre, Harvard University, 2017.
- "Piezoelectric Antennas for GSM Handsets", Apple Inc., Cupertino, 2013
(Host: Rubén Caballero, Vice President, Wireless System Design, Apple Inc.)
- "Railway Track Monitoring Using Lasers and MEMS Sensors", Corporate Headquarters, Network Rail, London, UK.
(Host: Kevin Robertshaw, Head of Engineering, SP&C, Network Rail, UK).
- "Energy Harvesting Using Thin Film Antennas", Nokia Research Centre, Cambridge, 2009.
(Host: Tapani Rhyänen, Director, Nokia Research Centre, Cambridge, UK)
- "Antenna Miniaturization Using Microsystems", Texas Instruments, Dallas, 2008.
(Host: William Krenik, CTO, Wireless Terminals Business Unit, Texas Instruments)

Professional Service

- Acted as reviewer for IEEE Trans. on IoT, PLOS, Physica Scripta and Scientific Reports (Springer Nature).

Languages

- English (Fluent) [IELTS Score: 8/9] (7.5 years of stay in the UK)
- French (Intermediate, two years of stay in France)
- Hindi (Native)
- German (Beginner) (Six months of stay in Germany and three months in Switzerland)

Interests

- Table Tennis, Chess, Swimming, Creative Writing, Photography (Expert in the use of DSLR and photo editing tools)
- Wrote articles for news portals like www.thewire.com and wionews.com on scientific issues

References

1. Professor William Milne (Ph.D., Imperial College)
Division of Electrical Engineering, University of Cambridge, UK
wim1@cam.ac.uk
2. Professor Gehan Amaratunga (Ph.D., Cambridge University)
Division of Electrical Engineering, University of Cambridge
gaja1@cam.ac.uk
3. Roland Bouffanais (Ph.D., EPFL)
Pillar of Engineering Product Development, Singapore University of Technology & Design, Singapore
bouffanais@sutd.edu.sg



K.Gopinath

Professor, Plaksha Univ,
Mohali, Punjab

(formerly superannuated from
Professor, Computer Science & Automation (CSA),
Indian Institute of Science (IISc), Bangalore 560012
e-mail: gopi@iisc.ac.in Web: <http://drona.csa.iisc.ernet.in/~gopi>)

ACADEMIC and EMPLOYMENT EXPERIENCE

Aug 2021-present: Founding faculty member, Plaksha University, Mohali, Punjab
Jul 1990 – Jul 2021: Faculty Member, CSA Dept, IISc, Bangalore

Jun 2007 - May 2009: Visiting Professor, UCSC Storage Systems Research Center
May 2005 - Jul 2005: Visiting Professor, Univ Joseph Fourier/Verimag (Grenoble)
May 2000 - Jun 2000: International Fellow, SRI International, MP, CA
Apr 2000 - May 2000, Jun 1998 - Jul 1998, Mar 1998 - Apr 1998, Oct 1997 - Nov 1997,
Jun 1997 - Aug 1997: Visiting Research Scientist, Courant Inst of Math Sciences, NYU
Apr 1988 - Mar 1990: Post-Doctoral Affiliate with Prof. John Hennessy, Stanford University, Stanford, CA.
Apr 1982 - Mar 1988: Research Assistant, Stanford University, Stanford, CA.
Jun 1980 - Mar 1982: Product Planning Engineer, Advanced Micro Devices, Sunnyvale, CA.
Sep 1977 - May 1980: Teaching Assistant, University of Wisconsin, Madison.

PROFESSIONAL INTEREST AREAS

Operating Systems, Storage Systems, Computer Systems Security, Software Verification

EDUCATION

Stanford University, Ph.D. in Computer Systems in Computer Systems Laboratory,
Departments of Electrical Engineering, and Computer Science, March 1988.
Dissertation Title: Copy Elimination in Single Assignment Languages.

Thesis Paper: K. Gopinath and John L. Hennessy, "Copy Elimination in
Functional Languages," Proceedings of ACM Symposium on Principles of
Programming Languages (POPL), Austin, Texas, Jan '89.

University of Wisconsin, Madison, M.S., Computer Science, June 1980.
Indian Institute of Technology, Madras, India, B.Tech., Electrical Engineering, May 1977.

Some Research Projects

Mobile Payment Systems for IOT Era (2019-2022) (Rs 44L)
Smart Cities Security & Privacy (2021-2024) (Rs 60L)
NetApp Faculty Fellow (2011-13) (Rs 30 lakhs)
IBM Faculty Award (for Synchronization with Flash Devices) (Rs 4 lakhs) (2009-10)
NetApp project on Trace analysis of Storage systems (Rs 12 lakhs) (2009-10)
NetApp project on System Design with Storage Class Memories (Rs 10 lakhs) (2010-11)
MCIT (Gov) 3 year project on correctness of secure and survivable storage protocols (Rs 35 lakhs) (2004-07)

Selected Publications

Book:

Suparna Bhattacharya, Kanchi Gopinath, Doug Voigt, "Resource Proportional Software Design for Emerging
Systems," Chapman and Hall/CRC, Feb 2020



(A+ conf papers in bold)

Ashish Panwar, Reto Achermann, Arkaprava Basu, Abhishek Bhattacharjee, K. Gopinath, Jayneel Gandhi, "Fast Local Page-Tables for Virtualized NUMA Servers with vMitosis," **ASPLOS 2021**.

Arpith K, K. Gopinath, "Need for a Deeper Cross-Layer Optimization for Dense NAND SSD to Improve Read Performance of Big Data Applications: A Case for Melded Pages," HotStorage'20, Boston.

Ashish Panwar, Sorav Bansal, K. Gopinath, "HawkEye: Efficient Fine-grained OS Support for Huge Pages," **ASPLOS 2019**

Panwar, A. Prasad, K. Gopinath, "Making Huge Pages Actually Useful," **ASPLOS 2018**

Ajinkya Rajput and K. Gopinath, "Analysis of Newer Aadhaar Privacy Models," ICISS'18.

Ajinkya Rajput and K. Gopinath, "Towards a more secure Aadhaar," ICISS 2017 (BEST PAPER award).

Aravinda Prasad, K. Gopinath, Paul E. McKenney, "The RCU-Reader Preemption Problem in VMs," **USENIX ATC 2017**.

Aravinda Prasad, K. Gopinath, "Prudent Memory Reclamation in Procrastination based Synchronization," **ASPLOS 2016**.

Ashish Panwar, Naman Patel, K. Gopinath, "A Case for Protecting Huge Pages from the Kernel," ApSys 2016

Lan Zhou, Vijay Varadharajan, K. Gopinath, "A Secure Role-based Cloud Storage System for Encrypted Patient Centric Health Records," Computer Journal, 2016

Ashish Panwar and Kanchi Gopinath, "Improving Power and Memory-Hotplug with a Migration Friendly Buddy Allocator," HiPC 2015.

Suparna Bhattacharya, K. Gopinath, Mangala Gowri Nanda, "Combining Concern Input with Program Analysis for Bloat Detection," **OOPSLA 2013**.

Mrinal Das, Suparna Bhattacharya, Chiranjib Bhattacharyya, Gopinath K, "Subtle Topic Models and Discovering Subtly Manifested Software Concerns Automatically," **ICML 2013**

Suparna Bhattacharya, Karthick Rajamani, K Gopinath, Manish Gupta, "Does Lean Imply Green? A Study of Power-Performance Implications of Java Runtime Bloat," **SIGMETRICS 2012**, Jun 2012

Pankaj Pipada, Achintya Kundu, K Gopinath, Chiranjib Bhattacharyya, Sai Susarla, Nagesh P. C., "LoadIQ: Online learning to label program phases using storage traces," HotStorage Jun 2012

Suparna Bhattacharya, K. Gopinath, Karthick Rajamani, and Manish Gupta, "Software Bloat and Wasted Joules: Is Modularity a Hurdle to Green Software," IEEE Computer, Sep'2011

Suparna Bhattacharya, Karthick Rajamani, K Gopinath, Manish Gupta, "The Interplay of Software Bloat, Hardware Energy Proportionality and System Bottlenecks," HotPower 2011

Suparna Bhattacharya, K. Gopinath, "Virtually Cool Ternary Content Addressable Memory," **HotOS 2011**

Lawrence L. You, Kristal T. Pollack, Darrell D.E. Long, K. Gopinath, "PRESIDIO: A Framework for Efficient Archival Data Storage," ACM Transactions on Storage, Vol 7,2, Jul 2011

Suparna Bhattacharya, Mangala Gowri Nanda, K. Gopinath, Manish Gupta. "Reuse, recycle to debloat software," **ECOOP 2011**

Neeraja J. Yadwadkar, Chiranjib Bhattacharyya, K. Gopinath, Thirumale Niranjan, Sai Susarla, "Discovery of Application Workloads from Network File Traces," 8th USENIX Conf on File and Storage Technologies (**FAST'10**), Feb 2010.

K. Gopinath, "Static Program Analysis for Security," in The Compiler Design Handbook: Optimizations and Machine Code



Generation, CRC Press, 2007. [Book Chapter]

Bhargava Kumar K, Ganesh M, Narayan, K. Gopinath, "Performance Evaluation of multiple TCP connections in iSCSI," 24th IEEE Conference on Mass Storage Systems and Technologies (MSST'07) San Diego, CA, 2007.

V H Gupta, K. Gopinath, "G²-VSR: An Information Theoretic Secure Verifiable Secret Redistribution Protocol for Long-term Archival Storage," 4th Intl IEEE Security In Storage Workshop, San Diego, 2007

V Sriram, Ganesh Narayan, K Gopinath, "SAFIUS - A secure and accountable filesystem over untrusted storage," Fourth International IEEE Security In Storage Workshop (SISW 2007), San Diego, CA Sep 27, 2007.

Sandhya G, K. Gopinath, "Design and Analysis of Rate Aware Ad Hoc 802.11 Networks," International Conference on Distributed Computing and Networking (ICDCN 2006), Guwahati, Dec'06, LNCS4308

KN Gopinath, Pravin Bhagwat, K. Gopinath, "An Empirical Analysis of Heterogeneity in IEEE 802.11 MAC Protocol Implementations and its Implications," The First ACM Intl Workshop on Wireless Network Testbeds, Experimental evaluation and Characterization (WiNTECH 2006), ACM MobiCom 2006, Los Angeles, Sep'2006.

N. Narasimha Datta, K. Gopinath, "A survey of routing algorithms for wireless networks," J.IISc, Vol 86, Number 6, Nov-Dec 2006.

M C Dharmadeep, K. Gopinath, "Proactive leader election in Asynchronous Shared Memory systems," ATVA (Automated Technology for Verification and Analysis), Oct 2006, Beijing, LNCS4218

V. H. Gupta and K. Gopinath, "An Extended Verifiable Secret Redistribution Protocol for Archival Systems," Intl Conf on Availability, Reliability and Security, Apr 20-22, 2006, Vienna IEEE Computer Society.

Amitabha Roy, K. Gopinath, "Improved Probabilistic Models for 802.11 Protocol Verification," **CAV 2005**, Edinburgh, LNCS 3576.

Girish Motwani, K. Gopinath, "Evaluation of Advanced TCP Stacks in an iSCSI Environment," 22nd IEEE - 13th NASA Goddard (MSST2005) Conf on Mass Storage Systems and Technologies April 11-14, 2005

Matti Luukkainen, Vivek K. Shanbhag, K. Gopinath, "Verifying a UMTS protocol using Spin and EASN," Electronic Notes in Theoretical Computer Science, Vol 118, Feb 2005.

Niranjan K. Boora, Chiranjib Bhattacharyya, K. Gopinath, "Efficient Algorithms for Intrusion detection," ICDCIT 2004, LNCS3347

K. Gopinath, "Register Allocation," in The Compiler Design Handbook: Optimizations and Machine Code Generation, CRC Press, 2002. [Book Chapter]

Neeraj Jaggi, K. Gopinath, "Verification of Leader Election Algorithm in Timed Asynchronous Systems," FST&TCS, Bangalore, Dec'01. LNCS 2245

Suresh Babu, K. Gopinath, "A Persistent Snapshot Device Driver for Linux," 2001 Annual Linux Showcase/Usenix, Oakland, CA Nov 6-10, 2001.

Venkatesh P., K. Gopinath, "The Design, Implementation and Framework for a Linux based Temperature Sensitive Storage," 2001 Annual Linux Showcase/Usenix, Oakland, CA Nov 6-10, 2001.

Vivek K. Shanbhag, K. Gopinath, Markku Turunen, Ari Ahtiainen, Matti Luukkainen, "EASN: Integrating ASN.1 and Model Checking," 13th Conference on Computer Aided Verification **CAV'01**, July 18-23, 2001 Paris, France LNCS 2102. [ps](#)

Mansoor Ali Khan, K. Gopinath, "Predictable Management of System Resources for Linux," 26th USENIX/FREENIX Annual Technical Conf, Boston, Jun'01

Vivek K. Shanbhag and K. Gopinath, "A SPIN-based Model Checker for Telecommunication Protocols," 8th International SPIN Workshop on Model Checking of Software (SPIN'2001), May 19-20, 2001, Toronto, Canada LNCS 2057.

K. Gopinath, Nitin Muppalaneni, N.Suresh Kumar, Pankaj Risbood, "A 3-tier RAID Storage System with RAID1, RAID5 and



compressed RAID5 for Linux," 25th USENIX/FREENIX Annual Technical Conf, San Diego, Jun'00 (USENIX2000).

K. Gopinath, M.K.Krishna Narasimhan, B.H.Lim, Anant Agarwal, "Performance Evaluation of Switch-Blocking on Multi-threaded Architectures, " International Conference on Parallel Processing, Chicago, Aug '94.

K. Gopinath and John L. Hennessy, "Copy Elimination in Functional Languages," Proceedings of ACM Symposium on Principles of Programming Languages (**POPL**), Austin, Texas, Jan '89.



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Education

Ph.D. Economics, University of Houston, Houston, TX, 2016 -May 2021 (expected)

Dissertation Title: *Credit Contract Enforcement and Income Disparities across Indian States: A Heterogeneous Agents Framework with Formal and Informal Firms*

MPhil Economics, Jawaharlal Nehru University, Delhi, India, 2012-2015

M.A. Economics, Jawaharlal Nehru University, Delhi, India, 2010-2012

BSc.(H) Mathematics, St. Stephen's College, Delhi University, India, 2005-2008

Fields of Interest

Macroeconomics, Development Economics, Entrepreneurship

Working Papers

"Credit Contract Enforcement and Income Disparities across Indian States: A Heterogeneous Agents Framework with Formal and Informal Firms" [Job Market Paper] ([Click here for latest version](#))

Abstract: This paper evaluates the role of enforcement of credit contracts in explaining the income per capita disparities across Indian states using a dynamic heterogeneous-agents general equilibrium framework with occupational choices. First, I estimate the impact of credit contract enforcement on occupational choices of the working population in India by exploiting the variation in the implementation of a major judicial reform policy across Indian states in 2002. Then, I develop and calibrate for each state a heterogeneous-agents model with differently sized firms of formal and informal types. In the model, the state-specific ability to enforce credit contracts imposes an endogenous borrowing constraint - which affects the borrowing ability of individuals, the potential size of firms they can run, and the profits they can earn. Combined with the labor market frictions and general equilibrium effects on wages and interest rates, individuals' sort into different occupational types. Overall, improved enforcement of credit contracts reduces the misallocation of factors of production - entrepreneurial skills, capital, and labor across production units- leading to increased aggregate productivity and output per capita.

Teaching and Research Experience

- *Lecturer*, Principles of Microeconomics (Spring 2020, Summer 2019)
- *Lecturer*, Principles of Macroeconomics (Fall 2018)
- *Teaching Assistant*, Introduction to Statistics, Mathematics for Economics (Fall 2019)
- *Teaching Assistant*, Intermediate Microeconomics (Spring 2019)
- *Teaching Assistant*, Introduction to Econometrics (Spring 2018, Fall 2017)
- *Teaching Assistant*, History of Economics (Spring 2017)
- *Teaching Assistant*, Behavioral Economics (Fall 2016)



Other Professional Experience

Software Analyst, Tata Consultancy Services, Bangalore, India, 2008-2010

Fellowships, Honors, and Awards

- *Dr. Walter J. Primeaux Jr. and Natalie A. Primeaux Scholarship*, University of Houston, 2020
- *Graduate Tuition Fellowship*, University of Houston, 2016 – present
- *UGC NET Lectureship Eligibility Examination*, India, June 2015
- *Research Scholarship*, Jawaharlal Nehru University, Delhi, India

Conferences and Presentations

Graduate Workshop, University of Houston, 2019, 2020

Languages

English (Proficient), Hindi (Native)

Computer Skills

Matlab, Stata, R, C++, LATEX

Citizenship/Visa: India/F1 Visa

References

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Professor Ruxandra Boul

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University of Houston
Phone: 713-743-3836
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3270, Dept. of Biological Sciences
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Pilani - 333031
Rajasthan, India.
manojkannan@pilani.bits-pilani.ac.in

Academic Background

| Year | Degree/Certificate | Board/University | Marks/GPA |
|------|---|---|------------------|
| 2016 | PhD | BITS Pilani | - |
| 2002 | M.E. Biotechnology | BITS Pilani | 9.58 (out of 10) |
| 2000 | M.Sc. (Tech.) Information Systems | BITS Pilani | 9.55 (out of 10) |
| 1996 | All India Senior School Certificate | Central Board of Secondary Education | 92.4% |
| 1994 | All India Secondary School Certificate | Central Board of Secondary Education | 88.4% |

Teaching

- Assistant Professor at BITS Pilani, Pilani Campus since June 2017.
- Also taught at BITS Pilani, Dubai Campus (2016-17)
- Courses taught:
 - Biological Sciences: *General Biology, Genetics, Cell Biology, Genetic Engineering Techniques, Recombinant DNA Technology, Developmental Biology, Instrumental Methods of Analysis, Introduction to Bioinformatics*
 - Computer Science: *Computer Programming (C and Unix)*
 - Humanities and Social Sciences: *Technical Communication, English Language Lab, Srimad Bhagavad Gita*
- Obtained consistently high student feedback in teaching. Some sample feedback received (unsolicited): [this](#) (for *General Biology*), [this](#) (for *Computer Programming*) and [this](#) (for *Srimad Bhagavad Gita*). More illustrative feedback can be found [here](#), including one from a [parent](#).

Institutional Contribution

- Member, BITS Senate (highest academic decision-making body)
- Member, Teaching-Learning Centre (where I was involved in conducting workshops for newly recruited faculty members of the Institute)
- Member, Academic Counseling Cell (actively involved in student counseling and mentoring).
- Convener, Departmental Committee on Academics (DCA) of Biological Sciences
- Instructor for Practice School – I (summer internship) program during 2016, 2018 and 2019.



Research Interests

- Primarily, Discipline-based Education Research (DBER) in biology and computer science
 - DBER involves doing research on pedagogical practices, effective teaching and learning strategies and evolving discipline-specific modules for student engagement and learning.
 - Currently working on implementing the Taxonomy of Significant Learning (also known as Fink's taxonomy) in biology courses and assessing its impact on student learning
 - Created and implemented novel pedagogical strategies for teaching introductory computer programming for undergraduates
- Epigenetics and computational biology

Research experience

- Doctoral work pursued at National Cancer Institute, Frederick, MD, USA and Ohio State University Comprehensive Cancer Center, Columbus, USA as part of a collaborative arrangement with BITS Pilani.
Title of thesis: '*Genetic and Epigenetic Control of L1 Retrotransposition in Mouse and Man*', PhD awarded in 2016.
Supervisor: David E. Symer, MD, PhD
- Master's dissertation on '*Design and implementation of a database for genetic engineering vectors*', January-May 2002
Guide: R.K. Mittal, Ph.D., Director, Special Projects, BITS Pilani
- Master's dissertation on '*Design and Implementation of Computerized Academic Registration*', September-December 2001
Guide: R.K. Mittal, Ph.D., Director, Special Projects, BITS Pilani
- Master's dissertation on '*Prevalence of H. pylori infection in Pilani, detected using ELISA, and its correlation with diabetes mellitus*', January-August 2001
Guide: Dr. R.P. Pareek, MD, Professor, Department of Pharmacy, BITS
- Master's thesis on '*Allelic Distribution of p53 gene in representative groups of different regions in India*', 2000-2001
Guide: Ashis Das, Ph.D., Professor, Department of Biological Sciences, BITS
- Summer Internship at Centre for Cellular and Molecular Biology, Hyderabad, India; worked on the project '*Purification of Rnase Inhibitor using affinity chromatography*', May-July 1998
Guide: Dr. Ravi Sirdeshmukh, Scientist E-II, CCMB (Currently Distinguished Scientist and Associate Director, Institute of Bioinformatics, Bengaluru)

Research Grant (consultancy)

- Co-PI for "*Development of an artificially intelligent virtual pregnant woman modeling suite to support regulatory decisions*", awarded by Office of Women's Health, FDA, USA from 2019-21; grant is for USD 156,000 (but no funds transferrable to India)



Journal Publications

1. Kannan M, Li J, Fritz SE, Husarek KE, Sanford JC, Sullivan TL, Tiwary PK, An W, Boeke JD, Symer DE. *Dynamic silencing of somatic L1 retrotransposon insertions reflects the developmental and cellular contexts of their genomic integration*. Mobile DNA. 2017 May 10; 8:8.
2. Li J, Kannan M, Trivett AL, Liao H, Wu X, Akagi K, Symer DE. *An antisense promoter in mouse L1 retrotransposon open reading frame-1 initiates expression of diverse fusion transcripts and limits retrotransposition*. Nucleic Acids Res. 2014; 42(7):4546-62.
3. Pareek RP and Kannan M. *Prevalence of H. pylori Infection in Type 2 Diabetes mellitus patients in Rural Rajasthan: A Case Control Study*. International Journal of Medical Science and Clinical Invention, 2014; 1(1)
4. Ravi B, Kannan M. *Epigenetics in the nervous system: An overview of its essential role*. Indian J Hum Genet. 2013 Oct;19(4):384-391. Review.

Manuscripts under preparation:

1. Arora, R., Maurya, A., Sharma, Y. and Manoj Kannan. *A comprehensive framework and tool for supporting Progressive Learning of Software Development in Academic Learning Environment*. To be submitted to "Computer Applications in Engineering Education".
2. Kannan M., Ashish Katyal and L. Dee Fink. *Improving learning in freshmen biology tutorial classes through implementing elements of Fink's taxonomy of significant learning*.
3. Kannan M. and Ashish Katyal. *Fair and effective assessment methods for online teaching*.

Book Chapters

1. Shumayal A., Saha R., Kannan M. (2018) *Effects and Interaction of Some Metallic Nanomaterials on Micro-organisms*. In: Sridharan K. (eds.) Emerging Trends of Nanotechnology in Environment and Sustainability. SpringerBriefs in Environmental Science. Springer, Cham
2. Shaji S., Haridas S., Jacob J.S., Kannan M. (2018) *Nanotechnology in Pharmaceuticals*. In: Sridharan K. (eds.) Emerging Trends of Nanotechnology in Environment and Sustainability. SpringerBriefs in Environmental Science. Springer, Cham
3. Kannan M., Baiju S.S., Hazarika S.A., Javed A. (2018) *Nanotechnology to Sustain Biodiversity*. In: Sridharan K. (eds.) Emerging Trends of Nanotechnology in Environment and Sustainability. SpringerBriefs in Environmental Science. Springer, Cham
4. Kannan M., Ali A., Matoo M., Jacob P. (2018) *Toxicological Impacts of Quantum Dots*. In: Sridharan K. (eds.) Emerging Trends of Nanotechnology in Environment and Sustainability. SpringerBriefs in Environmental Science. Springer, Cham



Workshops/Conferences for Presentations and Invited Lectures Delivered

1. "Assessments and Evaluation Techniques". Invited talk as part of *Naya Kshitij* Faculty Development Program organized by BITS Pilani from December 17-22, 2020.
2. "Compassionate Pedagogy during the Pandemic and Beyond". Invited talk as part of the Faculty Development Program organized by the Central University of Rajasthan from November 23 to December 3, 2020.
3. "Demonstrating Key Concepts through Student-participated Classroom Activities in Computer Programming Course". Poster (selected after blind peer review) presented at the Lilly Conference on Evidence-based Teaching and Learning held January 9-11, 2020 at Austin, Texas.
4. "Bringing Personalism in Teaching-Learning". Invited talk at the International Conference on Best Teaching Practices for Engaged Student Learning held February 13-15, 2020 at BITS Pilani - KK Birla Goa Campus.
5. "Intensive Teaching Workshop - An Institutionalized Program for Educator Training at BITS Pilani". Talk by Manoj Kannan and Kaushar Vaidya at the Third National Teachers Congress, held January 4-6, 2019 at MIT World Peace University, Pune.
6. "Teaching practices to improve student learning and performance in a freshmen biology course at BITS Pilani". Talk delivered at Symposium on Teaching Learning in Higher Technical Education held January 22-23, 2016 at IIT Madras, Chennai, India.
7. 2nd International Conference on Frontiers in Biological Sciences held January 22-24, 2015 at National Institute of Technology, Rourkela, Odisha, India.
8. International Symposium on Epigenetic Modifications of the Genome: Mechanisms and Implications held February 23-24, 2009 at Centre for Cellular and Molecular Biology, Hyderabad, India
9. "Various epigenetic marks are established at de novo L1 integrants in different human and mouse cells". Talk delivered at the Mid-atlantic Transposition Meeting, University of Pennsylvania, Philadelphia, PA; June 10, 2008.
10. 94th Annual Meeting of the American Association for Cancer Research held July 11-14, 2003 at Washington, DC



MONIKA SHARMA

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GoogleScholar#

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Profile

SERB Research Scientist, Chemical Sciences, IISER, Mohali

Areas of Specialization

Molecular Simulations, essential dynamics, free energy calculations, Membrane transporters Modeling, Computer Assisted Drug Designing, Computational Biology/ Chemistry, Bioinformatics, Artificial Intelligence, Network Analysis

Experience

SERB Research Scientist, Chemical Sciences IISER, Mohali – 05/2020- Present

Involves independent and collaborative research and teaching students

INSPIRE Faculty, Chemical Sciences IISER, Mohali – 2015- 04/2020

Involves independent and collaborative research and teaching undergraduates and graduate students.

Staff fellow, NINDS (National Institute of Neurological Disorders & Stroke), NIH; Bethesda, USA – 2013-2014

Energetics of ion binding sites in Na⁺ coupled symporter belonging to betaine choline-carnithine transporter (BCCT) family of membrane proteins.

Postdoctoral Fellow, Biochemistry and Molecular biology, Michigan State University, USA – 2012-2013

Role of conformational dynamics underlying the DNA mismatch repair process; and effect of crowding environment on nucleic acid conformations.

DAAD Fellow, Max Planck Institute of Biophysical Chemistry (MPIBPC), Goettingen, Germany – 2010

Design mutations to alter the conformational dynamics of the protein via harmonically restraining the essential dynamics along the principle mode.

PhD, IIIT, Hyderabad – 2007-2012

Thesis: Dynamics of Proteins and Nucleic Acids: Investigations of some contemporary issues.

Education

IIIT, Hyderabad – PhD (Computational Natural Sciences), 2012 CGPA(9)

Panjab University, Chandigarh – MSc (Chemistry Hons), 2005 First Division with distinction

Panjab University, Chandigarh – BSc (Chemistry Hons) 2003 First Division



Teaching Experience

Chemistry, IISER, Mohali – (2015-Current)

Computational courses:

CHM616: Computational chemistry (Even Sem 2015)

CHM619: Numerical methods in chemistry (Odd Sems 2017-2020)

CHM625*: Molecular dynamics simulations (Even Sems 2017-2019)

CHM615: Advanced Reactions Kinetics and Dynamics (Even Sem 2020)

IDC101: Introduction to computers (Even Sem 2020)

Lab courses:

CHM111: Organic and Inorganic Qualitative analysis of (Odd Sem 2015)

CHM112: Quantitative Analysis (Even Sem 2015-2016)

* **CHM625**: I designed and proposed this higher elective course (4 credits) in 2017. Approved and offered first time in Even Sem'17. Both CHM619 and CHM625 are attended by students from various disciplines: Chemistry, Biology, Physics, and Mathematics, and also from neighboring institute, INST.

Master's Dissertations (Awarded): 13 (Ongoing): 02

Awards and recognitions

- Outstanding award for oral presentation during ICONICA 2020, held at Panjab University, Chandigarh on Feb 13-14, 2020.
- Bharat Vikas Award in the field of contributions to "Structural Biophysics: 2019" by ISR, Bhubaneshwar.
- DST-INSPIRE Faculty Award 2014 (Session-II, July Advt.) in Chemistry with support money and research grant of Rs. 35 lacs for 5 years (2015-2020).
- Young Investigator Travel Award to attend YIM-2016, held at Manesar, Gurgaon.
- DAAD Fellowship, 2010 for four-month project starting from Jun 2010.
- International student travel grant award covering expenses towards travel and registration to attend GFST Symposium on Systems Biology: Integrative, Comparative and Multi-Scale Modeling, held on June 11-14, 2009 at Iowa State University, Iowa.
- Availed CSIR-JRF and CSIR-SRF fellowship during doctoral studies, 2005.

Member of Scientific Societies:

American Chemical Society (ACS), USA; Biophysical Society, USA; Indian Biophysical Society and Punjab Academy of Sciences.

Reviewer for journals: ACS Omega, Scientific Reports, RSC Advances, 3Biotech, RSC Food and Function, J Biomol. Struc. Dynamics, Current Drug Metabolism, Bentham Science Publishers



Number of publications: Total Published Publications: 27 (See Annexure I)

| | Published | | In review | Conference paper |
|---------------|-----------|-------------|-----------|------------------|
| | Indexed | Non-indexed | | |
| National | 2 | | | |
| International | 21 | 1 | 5 | 3 |

SPONSORED PROJECTS

| Title | Funding Agency | Role | Amount (In INR) | Years |
|--|-----------------------------|---------------------|-------------------------------|----------------|
| <i>In silico</i> understanding of molecular basis of recognition, binding, and regulation of mRNA by STAR family of transcriptional regulators | INSPIRE DST (Govt of India) | PI | 83.5 lacs (Completed) | 2015-2020 |
| Investigations of molecular mechanism and dynamics of 3' splice site recognition by SF1 and U2AF in humans | SRS, SERB (Govt. of India) | PI | 46 lacs (Ongoing) | 2020-2022 (+1) |
| Proposal for Establishment of Bioinformatics and Computational Biology Centre & NNP at IISER Mohali | DBT (Govt. of India) | PI/ co-investigator | Technical Approved (>500lacs) | 2020-2025 |
| Sugar acid transcriptional regulators (with Dr. Rachna Chaba, DBS, IISERM) | DBT (Govt. of India) | co-PI | ~89 lacs | 2020-2023 |



Research Publications

(#first author; *corresponding author)

Peer-Reviewed International Journals:

1. F. Ahmed[#], Monika Sharma[#], A.A. Al-Ghamdi, S.M. Al-Yami, A. M. Al-Salami, M. Y. Refai, M. K. Warsi, and S. M. Howladar. **2020** A comprehensive analysis of *cis*-acting RNA elements in SARS-CoV-2 genome by bioinformatics approach. *Frontiers in Genetics. In Press*.
2. G. Arya, M. Pal, Monika Sharma, B. Singh, S. Singh, V. Agrawal, Rachna Chaba **2020** Molecular insights into effector binding by DgoR, a GntR/FadR family transcriptional repressor of D-galactonate metabolism in *Escherichia coli*. *Mol. Micro.* 00:1-19. <https://doi.org/10.1111/mmi.14625>
3. M. Bhatia, J. Thakur, S. Suyal, R. Oniel, R. Chakraborty, S.Pradhan, Monika Sharma, S. Sengupta, Sunil Laxman, S. K. Masakapalli, A. K. Bachhawat. **2020**. Allosteric inhibition of MTHFR prevents futile SAM cycling and maintains nucleotide pools in one carbon metabolism. *J. Biol. Chem.* 2020 Sep 15;jbc.RA120.015129. doi: 10.1074/jbc.RA120.015129.
4. F. Alhoraify[#], F. Ahmed[#], Monika Sharma[#], M. Mahfuz, M. Baeshen, Y. Hawsawi, A. Almatrafi, S.A. Alsagaby, M. Rehan, Firoz Ahmed, and Mohammad Sarwar Jamal. **2020**. Bioinformatics approach for identification of pathogenic SNPs in BLM helicase and their biological consequences. *Scientific Reports*. 10: 12377.
5. Monika Sharma^{*,#}, Shakshi Sharma, and Apoorv Alwada **2019**. Understanding the binding specificities of mRNA targets by the mammalian Quaking protein. *Nucleic Acids Research*. 47(2): 10564-10579.
6. Vishwanath Turukarabettu; Balakrishna Kalluraya; Monika Sharma **2019**. Design and synthesis of sulfur cross-linked 1,3,4-oxadiazole-nitro(furan/thiophene) propenones as dual inhibitors of inflammation and tuberculosis: Molecular docking and Hirshfeld surface analysis. *Monatshefte fur Chemie- Chemical Monthly*. Montash Chem. 150:1999
7. Monika Sharma^{*,#} and C.R. Anirudh **2019** In silico characterization of residues essential for substrate binding of human cystine transporter, xCT. *J. Mol. Modeling*. J. Mol. Model. 25: 336.
8. Monika Sharma^{*,#}, Gopalakrishnan Bulusu and Abhijit Mitra. **2019**. Unfolding Transitions of Peripheral Subunit Binding Domains show Cooperative Behavior. *J. Phys. Chem. B*. 123(16):3441-3451.
9. V. Leone, I. Waclawska, K. Kossmann, C. Koshy, Monika Sharma, T.F. Prisner, C. Ziegler, B. Endeward, L.R. Forrest **2019**. Interpretation of spectroscopic data using molecular simulations for the secondary active transporter BetP. *The Journal of General Physiology*. 151(3):381-394.
10. Monika Sharma^{*,#} and C. R. Anirudh. **2017**. Mechanism of mRNA-STAR domain interaction: Molecular dynamics simulations of Mammalian Quaking STAR protein. *Scientific Reports*. 7: 12567.
11. Anup Arunrao Deshpande, Monika Sharma and Anand Kumar Bacchawat. **2017**. Insights into the molecular basis for substrate binding and specificity of the fungal cystine transporter CgCYN1. *Biochimica et Biophysica Acta (BBA)- Biomembranes* 1859(11): 2259-2268.



12. Mohammad Zulkifli, Shambhu Yadav, Anil Thakur, Shiffalli Singla, Monika Sharma, and Anand Kumar Bachhawat. **2016**. Substrate specificity and mapping of residues critical for transport in the high-affinity glutathione transporter Hgt1p. *Biochemical Journal*, 473(15):2369-2382.
13. Beibei Wang, Joshua Francis, Monika Sharma, Sean M. Law, Alexander V. Predeus, and Michael Feig. **2016**. Long-range signaling in MutS and MSH homologs via switching of dynamic communication pathways. *PLoS Computational Biology*. 12(10):e1005159.
14. Monika Sharma[#], Alexander V Predeus, Nicholas Kovacs, and Michael Feig. **2014**. Differential Mismatch Recognition Specificities of Eukaryotic MutS Homologs, MutSa and MutS β . *Biophysical Journal*. 106:2483-2492.
15. S. Michielssens, Jan H. Peters, David Ban, Supriya Pratihari, Daniel Seeliger, Monika Sharma, Karin Giller, Thomas Michael Sabo, Stefan Becker, Donghan Lee, Christian Griesinger, Bert L. de Groot. **2014**. A designed conformational shift to control protein binding specificity. *Angewandte Chemie*. 53(9):10367-10371.
16. Asli Yildirim, Monika Sharma, Bradley Varner, Liang Fang and Michael Feig. **2014**. Conformational preferences of DNA in reduced dielectric environment. *The Journal of Physical Chemistry B*. 118(37): 10874-10881.
17. Monika Sharma[#], Alexander V Predeus, Shayantani Mukherjee and Michael Feig. **2013**. DNA Bending Propensity in the Presence of Base Mismatches: Implications for DNA Repair. *The Journal of Physical Chemistry B*. 117(20): 6194-6205.
18. Vijay Kumar, Neetu Saxena, Monika Sharma and KV Radha Kishan. **2011**. Carboxylated Lysine is Required for Higher Activities in Hydantoinases. *Protein and Peptide Letters*. 18:663.
19. Monika Sharma[#], Gopalakrishnan Bulusu and Abhijit Mitra. **2009**. MD simulations of ligand- bound and ligand-free aptamer: Molecular level insights into the binding and switching mechanism of the *add* A-riboswitch. *RNA*. 15:1673-1692.
20. Monika Sharma[#], Smriti Khanna, Gopalakrishnan Bulusu, and Abhijit Mitra. **2009**. Comparative modeling of thioredoxin glutathione reductase from *Schistosoma mansoni*: A multifunctional target for antischistosomal therapy. *Journal of Molecular Graphics and Modelling*. 27:665-675.
21. Monika Sharma[#], Praveen Kumar, Harjinder Singh and Tushar K Chakraborty. **2006**. Preferential cyclotrimerization of 5-(aminomethyl)-2-furancarboxylic acid (AMFC): Electrostatic and orbital interactions studies. *Computational and Theoretical Chemistry* (formerly **Journal of Molecular Structure: THEOCHEM**) 764:109-115.

Conference Papers:

22. Michael Feig, Beibei Wang, Monika Sharma, Zachary Burton, Kristopher Opron, Robert Cukier, Alexander Predeus, Nicholas Kovacs, Sean Law & Shayantani Mukherjee. **2015**. How is fidelity maintained in nucleic acids? Two tales in DNA repair and DNA transcription from computer simulations. *Journal of Biomolecular Structure and Dynamics*, 33(sup1):6-7.
23. Michael Feig, Monika Sharma, Alexander V. Predeus, Shayantani Mukherjee, and Nicholas Kovacs. **2014**. DNA Bending and Discrimination of Mismatches by MutS and Human Homologs. *Biophysical Journal*, 106(2), 691a-692a.



24. Eshita Mutt, Monika Sharma, Abhijit Mitra, Jyothish Soman, K Kishore, N Yanamala. **2009**. Graph theoretic approach for studying correlated motions in biomolecules. *Nature & Biologically Inspired Computing*, 2009, 115:120.

Science education journals:

25. Monika Sharma[#] and Praveen Kumar. **2006**. Chemical Oscillations 2. Mathematical Modeling. *Resonance*. 11: 61-69.
26. Monika Sharma[#] and Praveen Kumar. **2006**. Chemical Oscillations 1. Basic principles and examples. *Resonance*. 11: 43-50.

Non-indexed International Publications:

1. Monika Sharma^{*,#} and C.R. Anirudh **2018**. Atomic-level characterization of conformational transition and substrate binding of xCT transporter. *bioRxiv*.
doi: <https://doi.org/10.1101/389643>

Abstracts published in conference proceedings (Oral Presentations)

Monika Sharma. Mechanism of mRNA-STAR domain interaction in mammalian QKI protein @ Inter-IISER & NISER Chemistry Meet-2017 (IINCM-2017) held at NISER, Bhubaneswar, Dec 22-24, 2017.

Monika Sharma. Modeling of transporters: Molecular Basis of substrate binding @ PUBioCon held at Department of Biophysics, Panjab University, Chandigarh, 2017.

Monika Sharma. Molecular Dynamics simulations of biomolecules: Significance in life sciences. @ Advancement in life sciences: Impact of Emerging Technology held at Dev Samaj College of Women, Ferozepur, March, 2017.

Monika Sharma. *In silico* design of conformational shift to control protein binding specificity @ Workshop on Advanced Techniques in Protein Design and Engineering organized by CPSDE, IISER Mohali, March 2016.

Abstracts published in conference proceedings (Poster Presentations)

National conferences:

Monika Sharma, Gopalakrishnan Bulusu and Abhijit Mitra. Conformational dynamics of *Thermotoga maritima* lysine riboswitch @ SIXTH RNA group meeting, held at IISc, Bangalore, 2012.

Monika Sharma, Gopalakrishnan Bulusu, Dhananjaya Bhattacharyya and Abhijit Mitra. Computational studies on purine riboswitches @ Nucleic Acids in Disease & Disorders, held at IIT, Delhi, 2011.

Monika Sharma, Harjinder Singh and Abhijit Mitra. Molecular dynamics investigations for understanding protein folding mechanism of a small two-helix protein. @ Discussion Meeting on Theoretical Chemistry (TCS-2009), organized by IISc and JNCASR, Bangalore, 2009.

Monika Sharma, Smriti Khanna, Gopalakrishnan Bulusu and Abhijit Mitra. Comparative Modeling of Thioredoxin Glutathione Reductase from *Schistosoma mansoni*: A Multifunctional Target for Antischistosomal therapy. @ National Symposium on Cellular and Molecular Biophysics (NCMB), organized by Indian Biophysical Society, held at ICT-CCMB, Hyderabad, 2009.



Monika Sharma, Eshita Mutt, Gopalakrishnan Bulusu and Abhijit Mitra. Molecular Dynamics studies of an Adenine Riboswitch. @ NCMB-2009 organized by Indian Biophysical Society, held at IICT-CCMB, Hyderabad, 2009.

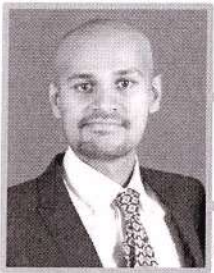
International conferences:

Monika Sharma, Gopalakrishnan Bulusu and Abhijit Mitra. Molecular Dynamics investigations of purine riboswitches- A mechanistic study. selected @ 18th Annual Growth Factor and Signal Transduction Symposium on Systems Biology: Integrative, Comparative and Multiscale Modeling, held at Iowa State University, Iowa, USA, 2009.

Monika Sharma, Smriti Khanna, Gopalakrishnan Bulusu and Abhijit Mitra. Homology Model for Thioredoxin Glutathione Reductase from *Schistosoma mansoni*. @ Indo-German Conference 2007-MCBR, held at IICT, Hyderabad, 2007.

Ramya Cherukupalli, **Monika Sharma**, N. Madhusudan Rao, Harjinder Singh and Abhijit Mitra. Molecular Dynamics Studies to Investigate Thermostability of Mutant Lipases. @ International conference on Bioinformatics and Drug Discovery, held at University of Hyderabad, 2007.





Prashanth Suresh Kumar

Environmental Biotechnologist with a blend of academic & industrial research expertise. Passionate about teaching & communicating science.



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Chennai, India

EDUCATION

❖ 2013 - 2018

PhD in Environmental Biotechnology,
Technical University of Delft, The Netherlands.

❖ Ongoing (Thesis stage)

MBA in International Management,
Business School Netherlands, The Netherlands.

❖ 2010 - 2012

MSc in Applied Biotechnology,
Uppsala University, Sweden.

❖ 2006 - 2010

B.Tech in Biotechnology,
Anna University (affiliated), India.

WORK EXPERIENCE

❖ 2019 – 2020 (24 months)

Project Manager at Wetsus, European centre of excellence for sustainable water technology, The Netherlands.

- Coordinating European Union funded Marie Curie research projects
- Writing research proposals
- Supervising researchers
- Writing science and technology newsletters

❖ 2018 – 2020 (Part time)

Researcher at Aquacare, Water treatment company, The Netherlands.

- Conducted pilot studies in realistic conditions
- Science communication at conferences, panel discussions

❖ 2018 (6 months)

Post Doctoral researcher at Wetsus, European centre of excellence for sustainable water technology, The Netherlands.

- Conducted pilot study in the context of \$ 10 million water treatment competition

❖ 2012-2013 (12 months)

Research assistant at Lund University, Sweden.

- Laboratory work of material synthesis and characterization

RESEARCH EXPERTISE

❖ **Phosphate (P) recovery from municipal wastewater via reversible adsorption (PhD and postdoctoral research)**



← A pilot plant built for P adsorption

Highlights:

- Research done in close collaboration with industries to solve a real world problem (harmful algal blooms)
- Highly multidisciplinary research with the team involving Mathematicians, Chemical Engineers, Nuclear Physicists and Biologists
- Used Biologically and Chemically engineered adsorbents
- Resulted in high quality publications and successful piloting of technology in Sweden and Canada

❖ **Arsenic adsorption from industrial wastewater (master's thesis and follow up research)**

Highlights:

- Research significant even in context of developing countries facing arsenic contamination
- Novel macroporous composites built using organic and inorganic polymers
- Resulted in 4 publications during master's study, 3 of which included me as the 1st author

ANALYTICAL METHODS

- **Imaging techniques** – Scanning and Transmission Electron Microscopy
- **High resolution analyte sensing** – Graphite Furnace Atomic Absorption and ICP-Mass Spectrometry
- **Structure determination** – X-Ray Diffraction and Mössbauer Spectroscopy
- **DNA & Protein analysis** – PCR, Gel Electrophoresis and Western Blotting



SCIENTIFIC PUBLICATIONS

1. **Suresh Kumar, P.**, Önnby, L. and Kirsebom, H. (2013) Arsenite adsorption on cryogels embedded with iron-aluminum double hydrous oxides: Possible polishing step for smelting wastewater? **Journal of Hazardous Materials** 250-251, 469-476.
2. **Suresh Kumar, P.**, Önnby, L. and Kirsebom, H. (2014) Reversible in situ precipitation: a flow-through approach for coating macroporous supports with metal hydroxides. **Journal of Materials Chemistry A** 2(4), 1076-1084.
3. Önnby, L., **Suresh Kumar, P.**, Sigfridsson, K.G.V., Wendt, O.F., Carlson, S. and Kirsebom, H. (2014) Improved arsenic(III) adsorption by Al₂O₃ nanoparticles and H₂O₂: Evidence of oxidation to arsenic(V) from X-ray absorption spectroscopy. **Chemosphere** 113, 151-157.
4. **Suresh Kumar, P.**, Flores, R.Q., Sjöstedt, C. and Önnby, L. (2016) Arsenic adsorption by iron-aluminium hydroxide coated onto macroporous supports: Insights from X-ray absorption spectroscopy and comparison with granular ferric hydroxides. **Journal of Hazardous Materials** 302, 166-174.
5. Wilfert, P., **Suresh Kumar, P.**, Korving, L., Witkamp, G.-J. and van Loosdrecht, M.C.M. (2015) The Relevance of Phosphorus and Iron Chemistry to the Recovery of Phosphorus from Wastewater: A Review. **Environmental Science & Technology** 49(16), 9400-9414.
6. **Suresh Kumar, P.**, Prot, T., Korving, L., Keesman, K.J., Dugulan, I., van Loosdrecht, M.C.M. and Witkamp, G.-J. (2017) Effect of pore size distribution on iron oxide coated granular activated carbons for phosphate adsorption – Importance of mesopores. **Chemical Engineering Journal** 326, 231-239.
7. Buliauskaite, R., Wilfert, P., **Suresh Kumar, P.**, de Vet, W., Witkamp, G.J. and Korving, L. (2018) Biogenic iron oxides for phosphate removal. *Environ Technol*, 1-7.
8. **Suresh Kumar, P.**, Ejerssa, W.W., Wegener, C.C., Korving, L., Dugulan, A.I., Temmink, H., van Loosdrecht, M.C.M. and Witkamp, G.-J. (2018) Understanding and improving the reusability of phosphate adsorbents for wastewater effluent polishing. *Water Research* 145, 365-374.
9. **Suresh Kumar, P.**, Korving, L., Keesman, K.J., van Loosdrecht, M.C.M. and Witkamp, G.-J. (2018) Effect of pore size distribution and particle size of porous metal oxides on phosphate adsorption capacity and kinetics. *Chemical Engineering Journal*.
10. **Kumar, P.S.**, Korving, L., van Loosdrecht, M.C.M. and Witkamp, G.-J. (2019) Adsorption as a technology to achieve ultra-low concentrations of phosphate: Research gaps and economic analysis. *Water Research X* 4, 100029.

REVIEWER

Peer- reviewed for international journals like **Water Research, Chemical Engineering journal, Environmental Science & Technology**



AWARDS & ACHIEVEMENTS

- **University rank holder** in B.Tech – Top 5 % amongst graduates
- **Winning team** in 3 stages and one of the 4 finalists in the **George Barley Water Prize**, a \$ 10 million challenge for cleaning algal bloom via phosphorus removal in the Everglades, Florida: <https://bit.ly/3t8wZUv>
- Amongst the **winning innovators** for cleaning algal blooms in the **Baltic Sea**. Was invited in panel discussion of innovators: <https://bit.ly/3nnncbV>

Panel discussion
for winning
innovators →



- Structured and coordinated the **Wetsus Innovation book** focusing on research projects that are current, future or accelerated innovations in water technology: <https://bit.ly/3ebmf3z>
- **Interviewer & author** of newsletter on P recovery: <https://bit.ly/3ePw2eK>
- **Co-authored** the Wetsus EMPOWER proposal that won a **EU grant of €1.7 million**, to promote innovative & multidisciplinary research in water technology.

ORGANISATIONAL & SUPERVISORY SKILLS

- **Organizing conferences and other events:**
 - Young Water Professional (YWP) BeNeLux conference (2015)
 - In-House Day at research institute for aspiring researchers (2019)
 - WaterSEED PhD recruitment challenge (2019 & 2020)
- **Teaching and supervision:**
 - Guided 4 international masters and 1 bachelor's thesis; assisted follow-up PhD researcher
 - Assisted team of high school students with water science projects and won the best project awards twice (2016 and 2017)

RELEVANT DISCIPLINES

Theoretical and practical knowledge in the following topics as part of biotechnology curriculum:

- Bioprocess Engineering
- Biochemistry
- Biosensors
- Cell and Molecular Biology
- Immunology
- Environmental Science

SOFT SKILLS

Courses completed as part of soft skills training/personal development:

- Communication for excellence
- Student supervision
- Career perspectives
- Talent identification for team work

HOBBIES

-  **Playing piano:**
Minimalistic music compositions
- **Running marathons** in different countries:
Won 1st in a team Triathlon (Olympic distance – 2019) 
-  **Travelling:**
Visited **48 countries**

REFERENCES

- **Prof. Mark van Loosdrecht**, Department of Environmental Biotechnology, Delft University of Technology,
M.C.M.vanLoosdrecht@tudelft.nl,
tel: +31152781618
- **Prof. Geert-Jan Witkamp**, Department of Environmental Science and Engineering, King Abdullah University of Science and Technology, Saudi Arabia,
geertjan.witkamp@kaust.edu.sa,
tel: +966(0)128082385
- **Leon Korving**, Theme coordinator, Wetsus, European centre of excellence for sustainable water technology, Leon.Korving@Wetsus.nl,
tel: +31582843000



RUCHA JOSHI

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Web: <http://ruchajoshi.weebly.com/>

Linkedin: <https://www.linkedin.com/in/rucha-joshi-49197b36>

Education

| | |
|--|------|
| Ph.D.: Biomedical Engineering Purdue University - West Lafayette, IN, USA | 2016 |
| Master of Science: Biomedical Engineering Vanderbilt University - Nashville, TN, USA | 2011 |
| Bachelor of Engineering: Biotechnology Engineering Kolhapur Institute of Technology, Shivaji University - Kolhapur, MH, India | 2009 |

Research Interests

| Biomedical Engineering | Engineering Education | Other |
|-----------------------------|---|-------------------------------|
| Soft tissue biograft design | Design and analysis of needs, learners, & context | Entrepreneurship |
| Drug delivery | Pedagogy design and development | Applied management principles |
| Biomaterial development | Diversity and Inclusion through teaching | Leadership in education |
| Biomechanics | Professional formation of engineers | Global Outreach |
| Regenerative medicine | Learning through service | Motivational speaking |
| Wound healing | Mentored teaching | STEM popularization |

Professional Work Experience

| | |
|--|--------------------|
| Assistant Professor of Teaching, Biomedical Engineering, UC Davis, CA, USA | 07/2018 to present |
| Post-Doctoral Researcher, Biomedical Engineering, Purdue University, West Lafayette, IN, USA | 01/2017 to 07/2018 |
| Graduate Teaching and Research Assistant, Purdue University, West Lafayette, IN, USA | 05/2012 to 12/2016 |
| Graduate Teaching and Research Assistant, Vanderbilt University, Nashville, TN, USA | 01/2010 to 12/2011 |
| Research Intern, National Chemical Laboratory, Pune, MH, India | 06/2007 to 07/2007 |
| Research Intern, Central Food Technological Research Internship, Mysore, KA, India | 07/2006 to 07/2006 |

Patents

- Inventor, "Process for Preparation of Biscuits using Banana Peel Pulp", Indian Patent 240466, 2008
- U.S. Patent No. 10,314,940 "Collagen-based Therapeutic Delivery Systems" issued June 11, 2019



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Book

- Joshi, R. (2008). “Bhartiya Balvaidnyanikachi Garudzep” (A giant leap of an Indian child scientist), Saket publications, India. ISBN - 978-81-7786-363-5. The book won Maharashtra Govt. state award for literature in 2008.
- Joshi, R. (2020) “Collagen Biografts for Tunable Drug Delivery”, Springer publications, manuscript in printing process currently

Publications

- **Joshi, R.**, White J. (2020). Design Thinking Approach to Identify Barriers to Engineering Education Reform in India, *Proceedings of the 2020 ASEE Virtual Annual Conference*. ([Link](#)).
- **Joshi, R.**, Zoltowski, C. B., Brightman, A. O., Eddington, S. M., Buzzanell, P. M, Torres D. (2018). Evaluating the Impact of Design Sessions on Participants’ Perceptions of Diversity and Inclusion in the Professional Formation of Biomedical Engineers, *Proceedings of the ASEE Annual Conference*, Salt Lake City, Utah. ([Link](#))
- Eddington, S. M., Zoltowski, C. B., Brightman, A. O., **Joshi, R. V.**, Buzzanell, P. M., Torres D. (2018). Diversity and Inclusion in Engineering: Students’ Perceptions of Learning and Engaging with Difference, *Proceedings of the ASEE Annual Conference*, Salt Lake City, Utah (**selected in best paper category**). ([Link](#))
- Zoltowski, C. B., Eddington, S. M., Brightman, A. O., Buzzanell, P. M., **Joshi, R. V.** (2018). Exploring the Professional Formation of Engineers and Diversity and Inclusion through Design Sessions, *2018 IEEE Frontiers in Education Conference (FIE)*, San Jose, California, USA, 2018, pp. 1-5. ([Link](#))
- Poole, K. M., Nelson, C. E., **Joshi, R. V.**, Martin, J. R., Gupta, M. K., Haws, S. C., Kavanaugh, T. E., Skala, M. C., Duvall, C. L. (2014). ROS-responsive microspheres for on demand antioxidant therapy in a model of diabetic peripheral arterial disease. *Biomaterials*, 41, 166-75. ([Link](#))
- **Joshi, R. V.**, Nelson, C. E., Poole, K. M., Skala, M. C., & Duvall, C. L. (2013). Dual pH- and temperature-responsive microparticles for protein delivery to ischemic tissues. *Acta biomaterialia*, 9(5), 6526-34. ([Link](#))
- Ramaswamy, A. K., Hamilton, M., **Joshi, R. V.**, Kline, B. P., Li, R., Wang, P., & Goergen, C. J. (2013). Molecular imaging of experimental abdominal aortic aneurysms. *The Scientific World Journal*. ([Link](#))

Conference Abstracts

- **Joshi, R.**, Kim H., Shi Y., Wang X., (2020). Student Motivation Assessment in a Sophomore BME Course that Switched Online in Response to COVID-19 Pandemic, *Biomedical Engineering Society (BMES) 2020 Virtual Annual Meeting*
- **Joshi, R.**, Hadley D., Hammes E., Niesen A. (2019). Fostering An Entrepreneurial Mindset Early-on in Biomedical Engineering Students, *Annual Meeting of Biomedical Engineering Society (BMES)*, Philadelphia, Pennsylvania
- Cebull, H., **Joshi, R.**, Brightman, A., Aboelzahab, A., Muskat, J., Xu, X., Kim M. (2018). Early Implementation of Project-based, Self-learning Module at Sophomore Level to Develop CAD Skills in BME, *Annual Meeting of BMES*, Atlanta, Georgia
- **Joshi, R.**, Brightman, A., Aboelzahab, A., Venderley, M., Tankasala, D., Thompson, M., Han, S. (2017). New Project-based, Self-learning Module at Sophomore Level to Jump-start Computer Aided Design (CAD) Skill Development in Biomedical Engineering Education, *Annual Meeting of BMES*, Phoenix, Arizona
- **Joshi R.**, Watkins L., Harbin S. (2015). Designer Collagen-Fibril Biograft Materials with Tunable Molecular Delivery, *Annual Meeting of BMES*, Tampa, Florida
- **Joshi R.**, Harbin S. (2013). Effect of Intermolecular Collagen Cross-link Content on matrix degradation, *Biomaterials Day co-sponsored by Society for Biomaterials (SFB)*, Nashville, TN, USA, 2013 (**First Prize for presentation**)
- **Joshi R.**, Duval C. (2011). Smart microspheres for stimuli responsive drug delivery, *Biomaterials Day co-sponsored by Society for Biomaterials (SFB)*, West Lafayette, IN, USA, 2011



- **Joshi R.,** Duval C.(2011). Stimuli Responsive Microspheres for Sustained Protein Release in Ischemic Environment, *Annual Meeting of BMES*, Hartford, Connecticut

Honors / Awards

- JIII, Tokyo Future Creation Excellence Award presented at International Young Innovator's Meet, Japan, 2004
- CII - DST Sponsored member of Indian team at the Indo-Russia Joint Technological Summit at Delhi, India
- Appreciation Letter from Dr. APJ Abdul Kalam, Ex-President of India, for patentable innovation, 2004
- All India Marathi Science Research Award, Mumbai, 2004
- National CSIR Diamond Jubilee Invention Award for school children, India, 2004
- One of the 5 finalists for KVPY-Department of Science and Technology Summer Internship Award, India, 2005
- Bangalore Bio- 2006 Award for best poster in International Biotechnology Conference, Bangalore, 2006
- Invited as Guest with Dr. APJ Abdul Kalam, Ex-President of India to inaugurate 15th National Children's Science Congress held in Pune, India, 2007
- Won Maharashtra State Govt. Literature Award for book written to motivate children towards STEM, 2008
- Outstanding Student of the College Award, KIT College, Maharashtra, India, 2009
- Recipient of Ross Fellowship awarded for outstanding PhD applicants, Purdue University, USA, 2012
- Recipient of Burton D. Morgan Fellowship for thought leadership, entrepreneurship & community engagement, Purdue University, USA, 2015
- Most Entertaining Pitch Award in Purdue's 8th Annual Elevator Pitch Competition, , Purdue University, USA, 2014
- Recipient of Emerge Scholarship offered through Making an Academic Change Happen Program organized by Rose-Hulman Institute of Technology, Terre Haute, IN, 2017
- Recipient, Transforming STEM Teaching Fellowship, offered by the Center for Educational Effectiveness (CEE), UC Davis, 2018-19
- Recipient of Engaged Learning and Teaching Community scholarship, offered by Center for Educational Effectiveness (CEE), UC Davis, 2020

Selected Talks

| Talk title | Given at | Year | Role |
|---|---|------|------------------|
| <i>"Student Motivation Assessment in a Sophomore BME Course that Switched Online in Response to COVID-19 Pandemic"</i> | 2020 Virtual Annual Meeting of Biomedical Engineering Society (BMES) | 2020 | Presenter |
| <i>"Approaching Challenges in Teaching Engineering in India and USA through the Lens of Design Thinking"</i> | DEED Special Session: Opportunities for Opportunities, ASEE Annual Conference | 2019 | Presenter |
| <i>"Engineering Education Reform through a Lens of Design Thinking"</i> | National Conference on Education, Communication and Society, Raipur, India | 2019 | Key-note speaker |
| <i>"Tissue Engineering and my journey to engineering tissues via Vanderbilt and Purdue University"</i> | Dept. of Biotechnology Sinhgad College of Engineering Pune, India | 2019 | Invited speaker |
| <i>"Designer Collagen Biografts For Drug Delivery"</i> | Pt. Ravishankar Shukla University, Raipur, India | 2019 | Invited speaker |
| <i>"Student learning outcome upon introducing Computer-Aided Design (CAD) module in Biomedical Engineering undergraduate curriculum",</i> | Weldon School of BME, Purdue University, West Lafayette, IN | 2017 | Presenter |



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| <i>"Application of collagen towards tunable drug delivery"</i> | Young Researchers Conclave, IIT Gandhinagar, GJ, India, | 2013 | Presenter |
| <i>"Effect of Intermolecular Collagen Cross-link Content on matrix degradation"</i> | <i>Biomaterials Day co-sponsored by Society for Biomaterials (SFB), at Vanderbilt University Nashville, TN</i> | 2013 | Presenter (First Prize for presentation) |
| <i>"Smart microspheres for stimuli responsive drug delivery"</i> | <i>Biomaterials Day co-sponsored by Society for Biomaterials (SFB), at Purdue University, West Lafayette, IN</i> | 2011 | Presenter |
| <i>"Interactive learning with classroom response system in biomaterials education"</i> | Vanderbilt University, Nashville, TN | 2011 | Presenter |
| <i>"Aim High"</i> | SGGS Institute of Engineering and Technology, Nanded, MH, India | 2011 | Invited speaker |
| <i>"Carve your journey for dream education"</i> | MGM College, Nanded, MH, India | 2011 | Invited speaker |
| <i>"RNA interference- a dream panacea"</i> | National college level biotechnology paper presentation contest, Warnanagar, MH, India | 2007 | Presenter (Won First prize) |

Workshop Presentations

| Workshop | Role |
|--|---------------------------|
| 'Active Learning in Online Education' for the faculty members of Indian Institute of Technology and Indian Institute of Science Education and Research, Tirupati. | Invited primary presenter |
| 'Incorporating Active Learning in Online Teaching', conducted faculty development workshop for BME Department UC Davis, August 2020 | Primary presenter |
| 'Global Problem-Solving Using Design Thinking' focused on United Nations Sustainable Development Goals, organized for campus-wide undergraduates in conjunction with Institute of Innovation and Entrepreneurship, UC Davis, October, 2019 | Organizer |
| 'Engineering Design and Prosthetic Leg Building' for underrepresented students at Harangul (MH), India, and Carbondale (CO), USA, in July 2017 | Primary presenter |
| Conducted biomedical engineering tours and workshop on viscoelasticity for minority students in engineering and College of Engineering's first year students, at Purdue University, June, 2017 | Facilitator |
| Led Biomedical Engineering component of Purdue's Seminar for Top Engineering Prospects (STEP) program June, 2017 | Presenter |

Certification Courses

- **Teaching and Learning in Engineering Education including courses in Educational Methods in Engineering, Mentored Teaching in Engineering**, 4 CEU, Purdue University, West Lafayette, IN; 2017 – 2018
- **Applied Management Principles**, 4 CEU, Purdue University, West Lafayette, IN; June 1-12, 2015



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Teaching Experience

Instructor, First Year Seminar, UC Davis, CA, USA

approved 01/2021 – 03/2021

- 2 unit course is designed to take students through the process of breaking down complex global health problems, and turning ideas into actionable solutions and making a pitch of intended solutions with an entrepreneurial mindset. Focusing on the UN SDG of Global Health and Well-being, this course invites undergraduate students from all disciplines to innovation and entrepreneurial thinking, building skills in interdisciplinary thinking, systems mindset and human centered design thinking to engineer global public health.

Instructor, Honors Course, UC Davis, CA, USA

approved 01/2022 – 03/2023

- Honors course proposed on “Searching for Sustainability through Entropic Forces and Collective Actions” to be jointly taught with Prof. Susette Min, UC Davis, was selected by UC Davis to be a part of the novel pilot project initiative, SHAPE — Science, Humanities and Arts: Process and Engagement, funded by Andrew Mellon Foundation

Instructor, Biomedical and pharmaceutical polymers (BIM 189C-007), UC Davis, CA, USA

09/2020-present

- An elective 4 credit course providing basics for understanding biomedical and pharmaceutical polymers, as well as polymers used in our daily life, and foundation for in-depth study of a variety of polymers; offered every Fall quarter to biomedical engineering undergraduates

Instructor, Fundamentals of Bioengineering course (BIM 020), UC Davis, CA, USA

07/2018 - present

- A required 4 credit course on basic principles of mass, energy and momentum conservation equations applied to solve problems in the biological and medical sciences; offered every Spring quarter to biomedical engineering sophomores

Instructor, Graphics Design in Biomedical Engineering course (BIM 020 L), UC Davis, CA, USA

01/2020 - present

- A required 2 credit course on Computer Aided Design and its application to problems in biomedical engineering; offered every Spring quarter to biomedical engineering sophomores

Instructional Laboratory Coordinator, Purdue University, West Lafayette, IN, USA

01/2017 to 06/2018

Instructing undergraduate laboratory courses in:

- **Biomolecular and cellular systems laboratory** - Introductory laboratory experience focused on engineering concepts and practices in the analysis of biomolecules and cells. Topics include fundamental quantitative techniques of analysis, methods of isolation, identification, and quantification of biomolecules and cells, and analysis of integrated biosystems. Concludes with student-driven design project.
- **Biomechanics and biomaterials laboratory** - Provides hands-on training in engineering and biological principles of biomaterials and biomechanics. Topics include evaluation and interpretation of experimental results, modeling and testing of tissue and body mechanics, and interactions of living and nonliving systems.

Co-instructor, Senior Project Design, Purdue University, West Lafayette, IN, USA

08/2017 to 12/2017

- Co-teaching **Professional Elements of Design** - Topics include project management, human and animal subjects, ethics, regulatory affairs, literature and patent searching, and entrepreneurship.

Graduate Teaching Assistant, Purdue University, West Lafayette, IN, USA

08/2012 to 12/2013

Supervised and aided in facilitating undergraduate laboratory sessions on :

- Biomolecular and cellular systems focused on methods of isolation, identification, and quantification of biomolecules and cells and analysis of integrated Biosystems.
- Principles of biomaterials and biomechanics focused on evaluation and interpretation of experimental results in modeling and testing of tissue and body mechanics, and interactions of living and nonliving systems
- Graduate level course on Tissue Engineering focusing on conceptual and problem solving framework related to tissue engineering.



Rucha Joshi | rvjoshi@ucdavis.edu | (O) +1 530 752 2177

A handwritten signature in blue ink, appearing to be "Rucha Joshi".

Graduate Teaching Assistant, Vanderbilt University, Nashville, TN, USA

01/2010 to 08/2011

Worked independently and jointly with other teaching assistants in undergraduate level courses in:

- Drug Delivery
- Biomedical materials
- Tissue Engineering
- Service Learning and Leadership in Biomedical Engineering

Research Highlights

Research in Biomedical Engineering Instruction and Education, UC Davis, CA USA

07/2018 to present

Focuses on:

- Instructional innovation in biomedical engineering, including incorporation of active learning, reflections, concept-maps, and just-in-time teaching activities
- Enhancing teaching, learning, outreach and diversity of engineers
- Faculty training and educational reform for making teaching-learning process enjoyable
- Integrating SGD education and entrepreneurial mindset in the BME curriculum
- Current research looks at applying human-centered design thinking to approaching challenges in teaching

Professional Formation of Engineers (Post-Doctoral Research)

01/2017 to 06/2018

Advisor: Dr. Andrew Brightman, Dr. Carla B. Zoltowski, Dr. Patrice M. Buzzanell, Purdue University, IN, USA

- Developing an understanding of the similarities and differences of the culture, ontologies, and epistemologies of ECE and BME engineering programs and how these impact the diversity and inclusion of the disciplines
- Understanding how the diversity and inclusion of the disciplines affect professional formation within the disciplines
- Exploring how design thinking can be used to investigate complex issues in engineering education to:
 - i) better prepare engineers for today's workforce;
 - ii) broaden understandings of engineering practice as both social and technical;
 - iii) create and sustain more diverse and inclusionary engineering programs

Project-based, self-learning module on Computer Aided Design (Post-Doctoral Research)

01/2017 to 10/2017

Advisor: Dr. Andrew Brightman, Purdue University, IN, USA

- Developed and tested curriculum of new project-based, self-learning module at sophomore level to jump-start Computer Aided Design (CAD) skill development in biomedical engineering education, teaching students to:
 - i) understand and recall the basics of CAD
 - ii) design a 3-D model of a biomedical device
 - iii) evaluate the rapid prototyped product for the relevant functional properties
 - iv) communicate the design process and outcome in a written report

Designer Collagen-Fibril Biograft Materials with Tunable Molecular Delivery (PhD Thesis)

05/2012 to 12/2016

Advisor: Dr. Sherry Voytik-Harbin, Purdue University, IN, USA

- Designed multifunctional 3D collagen-fibril biograft materials with tunable physical and molecular delivery properties
- Devised and validated an *in vitro* system for quantifying kinetics of molecular release from collagen
- Created heparinized collagen constructs (low fibril-density and high fibril-density) for controlled delivery of Vascular Endothelial Growth Factor (VEGF)
- Applied collagen biograft materials for enhanced local neovascularization *in vitro* and *in vivo* Chicken Egg Embryo Chorio Allantoic Membrane (CAM) model

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ROS-Responsive Microspheres for On-Demand Antioxidant Therapy 01/2011 to 12/2011
Advisor: Dr. Craig Duvall, Vanderbilt University, TN, USA

- Synthesized & characterized micro-particle based delivery system platform from reactive oxygen species (ROS) responsive poly(propylene sulfide) (PPS) for sustained drug delivery
- Successfully demonstrated “on demand” antioxidant therapy using therapeutic curcumin

pH & Temperature Responsive Microparticles for Protein Delivery 01/2010 to 12/2010
Advisor: Dr. Craig Duvall, Vanderbilt University, TN, USA

- Designed and developed a dual temperature and pH-responsive microsphere delivery system for sustained protein delivery to ischemic environments
- Characterized and conducted proof-of-concept studies for controlled release and biocompatibility of microspheres

Remedy against bacteria commonly causing Urinary Tract Infection 07/2008 to 07/2009
Advisor: Dr. Vijay Sawant, Shivaji University, MH, India

- Developed antibacterial extracts of natural herb Celosia Argentea L. & investigated its effectiveness against bacteria commonly causing urinary tract infections

Mentorship

| <i>Year</i> | <i>Mentee</i> | <i>Projects guided</i> |
|-------------|--|--|
| 2019 | Remy Leutenegger, sophomore BME student, UC Davis, CA, USA | Assessment of bioreactor designs created using Computer Aided Design |
| 2017 | Mahera Husain, Sophomore in Biomedical Engineering Department, Purdue University, IN, USA | Collagen based VEGF delivery, Manuscript writing |
| 2014 | Lauren Watkins, Sophomore in Biomedical Engineering Department, Purdue University, IN, USA | Characterizing release profiles from collagen polymers |
| 2013 | Rosette Nkulu, HHMI summer student intern, Franklin College of Indiana, IN, USA | Designing tunable collagen polymers for improved drug delivery |

Training Received

| Year | Training Description | Duration | Organization providing training |
|-------------|---|-----------------|---|
| 2018-19 | Faculty Development Program | 1 year | Centre for Educational Effectiveness, UC Davis |
| 2017 | Making an academic change happen: change project ideation, and problem diagnosis | 3 days | Rose – Hulman Institute of Technology, Terre Haute, IN, USA |
| 2017 | NSF I-Corps training on customer discovery for an educational entrepreneurship project | 1 month | Krannert School of Management, Purdue University, West Lafayette, IN, USA |
| 2017 | Bringing Intercultural Competence to the Classroom | 1 day | Centre for Instructional Excellence, Purdue University, West Lafayette, IN, USA |
| 2017 | Effective College Teaching and Mentoring | 1 day | Centre for Instructional Excellence, Purdue University, West Lafayette, IN, USA |
| 2015 | Applying Management Principles, including strategy, change management, and leadership amongst many others | 12 days | Krannert School of Management, Purdue University, West Lafayette, IN, USA |
| 2014 | Integrating Design and Community Engagement within the Curriculum | 3 days | EPICS, Purdue University, West Lafayette, IN, USA |



Leadership

- Secretary, New Engineering Educators Division of American Society for Engineering Education, 2020-2021
- President, Purdue Marathi Mandal, West Lafayette, USA, Aug 2014 to Aug 2015
- Captain, Kolhapur Institute of Technology's Badminton Team, Shivaji University, Kolhapur, India, 2005-2009
- Group Leader, Project- Low Calorie Biscuits from Banana Peel Pulp, Nanded, India, 2002-2005
 - Innovated new concept that made recycling of banana peels possible. Developed a product, studied its nutritional value and evaluated people's acceptance of the product.
- Group Leader, Project- Causes of Myopia and Hypermetropia in School Children of Nanded, India, 2001
 - Surveyed 248 students in 8 schools in Nanded district, Maharashtra, India. Recommended suggestions for improving habits having negative effect on eyesight.
- Group Leader, Project- Pollution caused by Firecrackers during Diwali Festival, Kolhapur, India, 2006-2007
 - Collected data from surveys, analyzed it, and suggested solutions for pollution problem pertaining city of Kolhapur, Maharashtra, India.

Memberships

| Organization | From | to |
|--|------|-------------|
| American Society for Engineering Education (ASEE) | 2017 | present |
| Biomedical Engineering Society (BMES) | 2010 | present |
| SWE (Society for Women in Engineering) | 2015 | 2016 |
| National Children Science Congress Alumni Association, India | | Life member |

Community Service/ Volunteering

- Created book-reading project in Marathi for STEM popularization and out-of-the box thinking in children 2020: you tube channel: <https://youtu.be/F2QjwHfGRx0>
- Worked upon "save river expedition" on River Godavari, Nanded, India, and created a documentary, 2012: <https://youtu.be/Uk-2-9HEPJM>
- Presented about the BME major and its opportunities at the Society of Women Engineers, UC Davis program for underrepresented high school seniors (namely women, non-binary, and gender nonconforming individuals) who are interested in applying to engineering majors. Davis, CA, 2020
- Volunteered at visitors' booth of Purdue BME program in the annual BMES 2017 conference
- Volunteered for hindi translation of Project Purdue University's Institute for Social Empowerment through Entrepreneurship and Knowledge (ISEEK) app, that was launched in Ranchi, India on June 21, 2016. Project empowers under-privileged and poverty-stricken young people in the world to lift themselves out of poverty and lead healthy and prosperous lives.
- Facilitated telescope-based star gazing workshop for high school children to increase their STEM awareness. Raipur, India, 2016
- Planned and Coordinated Marathi Organization activities at Purdue University, 2012-16
- Raised awareness about combating problems faced by women in university environment as the college of engineering representative, Shivaji University, Kolhapur, India, 2006-2009
- Conducted All India Marathi Science Congress work for popularizing science & technology, India, 2007- 2009



Institutional Service (Past 3 years)

Department Committees (Biomedical Engineering)

| | |
|--------------|--|
| 2018-2019 | Department Space and Facilities Committee |
| 2018-present | Department Undergraduate Curriculum Committee |
| 2019-present | Department Committee on planning M.Eng. in Medical Product Development |
| 2019-present | Department Accreditation Committee- in charge of Student Learning Outcomes |

College Committees

| | |
|---------|--|
| 2019-20 | Department of Chemical Engineering Search Committee for Assistant Professor of Teaching |
| 2020-21 | Review Committee for selection of the Seed Grants for International Activities for 2020-2021 |

Grants (Past 3 years)

| Grant Agency | Work Focus | Role | Submitted date | Grant Amount | Granted? | Notes |
|--|---|------------------|----------------|---------------------------|-----------|--|
| SPARC India (Scheme for Promotion of Academic and Research Collaboration - Government of India Initiative) | Identifying Barriers To Innovations In Engineering Education. We created partnership between India and USA engineering institutes to initiate the human centred design thinking based engineering education reform, and develop mutually collaborative solutions. | International PI | 10/25/19 | \$111,027 (INR 81,49,600) | In review | Decision stalled due to COVID-19 |
| UC Davis SHAPE – grant for team-taught course | Searching for Sustainability through Entropic Forces and Collective Actions. This proposal is about developing and teaching a course about how thermodynamic concept of entropy can be applied to view life on earth. And how the economic activity of humans and its intersection with the environment impacts entropy and sustainability. | PI | 2020 | \$11,500 | Yes | Link to selected course that was proposed. |
| VentureWell Faculty Grant | The Age of Sustainable Development. An interdisciplinary Honors course series that integrates education of Sustainable Development Goals in undergraduate curriculum early on, through the entrepreneurial, global and interdisciplinary mindsets | PI | 11/3/20 | \$24,000 | In review | - |



Reviewer

- Proceedings of the American Society for Engineering Education (ASEE) 2017-present
- Colloids and Surfaces B: Biointerfaces journal 2019-present
- Scholarship of Teaching and Learning Conference Posters, UC Davis 2018

Extracurricular Activities

| <i>Activity</i> | <i>Award / Position</i> | <i>Remark</i> |
|-----------------|---|----------------------------------|
| SCUBA | Certified basic level SCUBA diver | NAUI (USA) certification |
| Badminton | Zonal Winner | University Level, India |
| Badminton | 3 rd in Zone | University Level, India |
| Badminton | Played Inter-university Games | Shivaji University Player, India |
| Chess | Winner | Nanded District Level, India |
| Badminton | 2 nd in Kendriya Vidyalaya Meet | National Level, India |
| Badminton | Played 45 th National School Games | Kendriya Vidyalay Representative |
| Mono Act | Ubharta Sitara (Rising Star) Award | Institute Level |

Hobbies

Badminton, Theatre, Hiking, Wild-life, Star-gazing, Journal-writing, Indian Classical Singing, Collecting stones, Assemblage art



Rupesh Deshmukh

Ramalingaswami Fellow (Scientist D)
National Agri-Food Biotechnology Institute (NABI)
Mohali, Punjab, India
rupesh0deshmukh@gmail.com
Ph. No.: (965) 079-2638



Professional Experience

| | |
|---|-----------------------------|
| Ramalingaswami Fellow (Scientist D) | From Apr 2018 |
| National Agri-Food Biotechnology Institute (NABI) Mohali (PB) India | |
| Visiting Professor | Dec 2014 to Apr 2018 |
| University Laval, Quebec (QC) Canada | |
| Post-doctoral Fellow | Feb 2014 to Nov 2014 |
| University of Missouri, Columbia, USA | |
| Post-doctoral Fellow | Jul 2011 to Feb 2014 |
| University Laval, Quebec (QC) Canada | |

Academic Pursuit

| | |
|---|----------------------|
| Ph.D. (Biotechnology) | March 2011 |
| Swami RamanandTirthMarathwada University, Nanded (MS) India | |
| M.Sc. Agriculture (Biotechnology) | December 2004 |
| Indira Gandhi. Agriculture University Raipur (CG) | |
| B.Sc. Agriculture (4 years) | June 2002 |
| Marathawada Agriculture University, Parbhani (MS) India | |

Awards and Fellowships

| | |
|--|----------------------|
| NASI Scopus Young Scientist Awards 2019 – Elsevier. The Award is from NASI and Elsevier to recognize India's most promising researchers who are working in the field of AGRICULTURE and are committed to developing sustainable models that help in increasing food security and improving the quality of life of people living in rural areas. | November 2019 |
| Fellow of Indian Society of Genetics and Plant Breeding (FISGPB) | December 2018 |
| Ramalingaswami Fellowship by Ministry of Science & Technology Department of Biotechnology Government of India | November 2017 |
| Awarded Research Excellence Fellowship award for postdoctoral researcher by FSAA Laval University, Quebec (QC) Canada | July 2011 |

National level qualifications

| | |
|--|----------------------|
| Qualified National Eligibility Test (NET) for Lectureship conducted by Agricultural Scientist Recruitment Board, Government of India | December 2009 |
| Qualified National Eligibility Test (NET) for Lectureship conducted by University Grant Commission and CSIR, Government of India | June 2008 |



Research Projects and Funding

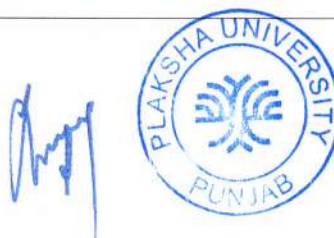
| S. No | Title of the project | Total cost | Agency | Present status | Role (PI/CI) |
|-------|--|------------|--------|----------------------|-------------------|
| 1. | Improvement in silicon uptake, fruit quality and yield by targeting multiple genes (SINIP2-1, SIAP2a SP5G and PL) with CRISPR/CAS9 approach in tomato | 88 lakhs | DBT | 3 rd year | PI |
| 2. | Understanding the molecular basis of selective transport of silicon and arsenic by modulating Nodulin 26-like Intrinsic protein 2-1 (NIP2-1) in rice (<i>Oryza sativa</i>) | 37 lakhs | SERB | 2 nd year | PI |
| 3. | Imparting sheath blight disease tolerance in rice | 59 lakhs | DBT | 2 nd year | Co-PI |
| 4. | Development of superior haplotype based near isogenic lines (Haplo-NILs) for enhanced genetic gain in rice | 75 lakhs | DBT | 2 nd year | Co-PI |
| 5. | CRISPR/Cas9 mediated multiplex genome editing for yield and quality improvement of bran oil in rice | 35 lakhs | DBT | 1 st year | PI Coordinator |

Teaching

| S. No | Subject | Degree | University/Institute |
|-------|--|------------|-----------------------------|
| 1. | Basic Bioinformatics | Ph.D. | NABI |
| 2. | Fundamentals of Genomics | Ph.D. | NABI |
| 3. | Molecular Breeding (Assisted Prof. Henry Nguyen) | Ph.D./M.Sc | University of Missouri, USA |

Research Supervisor (Ph.D.)

| S. No | Student Name | Thesis Title | Year | Degree |
|-------|-----------------|---|----------------------|--------|
| 1. | Ruchi Bansal | Understanding hypersensitive response and programmed cell death using multi-omics big data in rice (<i>Oryza sativa</i> L.) | Submitted | Ph.D. |
| 2. | SurbhiKumawat | Identification of loci governing fruit quality traits using genome-wide association study in tomato (<i>Solanum lycopersicum</i> L.) | 3 rd year | Ph.D. |
| 3. | Vandana Thakral | Understanding evolution of transporters defining the uptake, accumulation, and beneficial role of silicon in plants | 2 nd year | Ph.D. |
| 4. | Gaurav Raturi | Understanding genomic plasticity of metalloids solubilizing symbiotic bacteria from Poales | 3 rd year | Ph.D. |



Patents Published

Belanger R, **Deshmukh R**, Belzile F. (2015) "Plant with increased....." U.S. Provisional Patent application N° 62/164.031 filed May 20, 2015, **Published on Nov 4, 2016**: WO2016183684

Licencing

Technology and genetic material for high silicon uptake soybean (Hisil) licenced to Syngenta® United State

Editorial experience

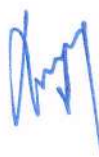
1. Associate Editor for The Plant Genome (IF 3.5)
2. Associate Editor for Journal of Plant Biochemistry and Biotechnology (IF 0.8)
3. Associate Editor for Bulletin of the National Research Centre
4. Topic Editor for Biomolecules (IF 4.0)
5. Review Editor for Frontiers in Nutrition (IF 3.3)
6. Review Editor for Frontiers in Plant Science (IF 4.0)
7. Guest Associate Editor of Environmental and Experimental Botany (Impact Factor (IF) 4.3)
8. Guest Associate Editor of Frontiers in Plant Science (IF 4.3)
9. Guest Associate Editor of Frontiers in Physiology (IF 4.1)
10. Guest Associate Editor of International Journal of Genomics (IF 2.4)
11. Guest Associate Editor of Plant Physiology and Biochemistry (IF 3.7)
12. Guest Editor of Plant stress
13. Lead Guest Editor Journal of Advanced Research (IF 6.99)
14. Lead Guest Editor Biomolecules (IF 4.0)
15. Lead Guest Associate Editor of International Journal of Genomics (IF 2.4)
16. Editorial board member of the Indian Journal of Genetics and Plant Breeding (IF 0.4)
17. Editorial board member of the American Association for Science and Technology

Member of Academic Societies

1. Member Crop Science Society America (CSSA)
2. Life member of Indian Society of Biochemistry and Biotechnology
3. Life member of Indian Society of Genetics and Plant Breeding
4. Life member of Indian Science Congress
5. Life member of Association of Rice Research Workers

Organisation of scientific conference

1. Kosambi International Webinar Series on Plant Genomics hosted by Savitribai Phule Pune University (SPPU), Pune, India, during 31st July - 2nd August 2020 – Organizers: Nadaf A, Barvkar V, **Deshmukh R**.
2. Workshop on Membrane Protein Structure and Molecular Dynamic Simulations, Department of Botany, SPPU, Pune, India, during 13th to 15th March 2021 – Organizers: Nadaf A, Barvkar V, **Deshmukh R**, Sharma U, Zargar S
3. Kosambi International Webinar Series on Plant Genomics hosted by Savitribai Phule Pune University (SPPU), Pune, India, during 31st July – 1st August 2021 – Organizers: Nadaf A, Barvkar V, **Deshmukh R**.



Editorial Articles

Deshmukh R*, Nguyen HT, Belanger RR (2017) Aquaporins: Dynamic Role and Regulation. *Front Plant Sci.* 15;8:1420.

Deshmukh R*, Ma JF, Belanger R (2017) Role of Silicon in Plants. *Frontiers in Plant Science.* 8:1858.

Chaudhary J, **Deshmukh R***, Sonah H (2018) Mutagenesis Approaches and Their Role in Crop Improvement. *Plants* 8 (11) 467 doi: 10.3390/plants8110467

Ahmad P, Tripathi DK, **Deshmukh R***, Singh VP, Corpas FJ (2019) Revisiting the role of ROS and RNS in plants under changing environment. *Environmental and Experimental Botany* 161: 1-3.

Publons Top Reviewer Awards (Global) Global Peer Review Awards by Web of Science Group, Publons

| | |
|--|----------------|
| Top reviewers in Plant and Animal Science | September 2019 |
| Top reviewers in Cross-Field | September 2019 |
| Top reviewers for Multidisciplinary | September 2018 |
| Top reviewers for General | September 2017 |
| Sentinels of Science: Agricultural and Biological Sciences | September 2016 |

Link for Publons records: <https://publons.com/researcher/209674/rupesh-kailasrao-deshmukh>

Best Reviewers Awards

| | |
|---|---------------|
| Best Reviewer of the year by <i>Plants</i> (ISSN: 2223-7747) | November 2019 |
| Best Reviewer of the year by <i>Indian Journal of Genetics and Plant Breeding</i> (ISSN: 0975-6906) | December 2019 |

Stanford list of world's top 2% scientists

| | |
|---|--------------|
| Subject area: Plant Science | October 2021 |
| H-index – 35; I10- 67; Citations - 3900 | |

Books

1. **Deshmukh R**, Tripathi DK, Guerriero G (2020) *Metalloids in Plants: Advances and Future Prospects*. John Wiley & Sons, ISBN:1119487196, 978111948719
2. Sharma TR, **Deshmukh R**, Sonah H (2020) *Advances in Agri-Food Biotechnology*. Springer Nature Singapore, eBook ISBN 978-981-15-2874-3, Hardcover ISBN 978-981-15-2873-6
3. **Deshmukh R**, Nguyen H, Belanger R (2017) *Aquaporins: Dynamic Role and Regulation*. Frontiers Media SA, ISBN 2889452891, 978288945289
4. **Deshmukh R**, Ma J, Belanger R (2017) *Role of Silicon in Plants*. Frontiers Media SA, ISBN 2889453529, 9782889453528



5. **Deshmukh R**, Ansari W, Nadaf A (2021) Biofortification in Cereal. Springer Nature Singapore, - Submitted
6. Roychoudhury A, Tripathi DK, **Deshmukh R** (2021) Metal and Nutrient Transporters in Abiotic Stress, Elsevier Science, ISBN:9780128179567, 0128179562
7. Roychoudhury A, Tripathi DK, **Deshmukh R** (2021) Transporters and Plant Osmotic Stress, Elsevier Science, ISBN:9780128179581, 0128179589

Selected recent research publications (from 2010)

- Deshmukh R**, Sonah H, Belanger R (2020) New evidence defining the evolutionary path of aquaporins regulating silicon uptake in land plants. *Journal of Experimental Botany*. doi: 10.1093/jxb/eraa342
- Mandlik R, Thakral V, Raturi G, Shinde S, Nikolić M, Tripathi DK, Sonah H, **Deshmukh R*** (2020) Significance of silicon uptake, transport, and deposition in plants. *Journal of Experimental Botany*. doi: 10.1093/jxb/eraa301
- Manna M, Thakur T, Chirom O, Mandlik R, **Deshmukh R**, Salvi P (2020) Transcription factors as key molecular target to strengthen the drought stress tolerance in plants. *Physiologia Plantarum* <https://doi.org/10.1111/ppl.13268>
- Ram H, Singh A, Katoch M, Kaur R, Sardar S, Palia S, Satyam R, Sonah H, **Deshmukh R**, Pandey A, Sharma TR (2020) Dissecting the nutrient partitioning mechanism in rice grain using spatially resolved gene expression profiling. *Journal of Experimental Botany*, eraa536,
- Bansal R, Rana N, Singh A, Dhiman P, Mandlik R, Sonah H, **Deshmukh R***, Sharma TR (2020) Evolutionary Understanding of Metacaspase Genes in Cultivated and Wild *Oryza* Species and Its Role in Disease Resistance Mechanism in Rice. *Genes* 11:1412.
- Ratnaparkhe MB, Marmat N, Kumawat G, Shivakumar M, Kamble VG, Nataraj V, Ramesh SV, Deshmukh MP, Singh AK, Sonah H, **Deshmukh R**, Prasad M, Chand S, Gupta S (2020) Whole Genome Re-sequencing of Soybean Accession EC241780 Providing Genomic Landscape of Candidate Genes Involved in Rust Resistance. *Current Genomics*. 21 (7):504-11.
- Vats S, Bansal R, Rana N, Kumawat S, Bhatt V, Jadhav P, Kale V, Sathe A, Sonah H, Jugdaohsingh R, Sharma TR, **Deshmukh R*** (2020) Unexplored nutritive potential of tomato to combat global malnutrition. *Critical Reviews in Food Science and Nutrition* doi.org/10.1080/10408398.2020.1832954
- Kumar N, Kumawat S, Khatri P, Singla P, Tandon G, Bhatt V, Shinde S, Patil GB, Sonah H, **Deshmukh R*** (2020) Understanding aquaporin transport system in highly stress-tolerant and medicinal plant species Jujube (*Ziziphus jujuba* Mill.). *Journal of Biotechnology* 324: 103-111
- Singh S, Bhatt V, Kumar V, Kumawat S, Khatri P, Singla P, Shivaraj SM, Nadaf A, **Deshmukh R**, Sharma TR, Sonah H (2020) Evolutionary Understanding of Aquaporin Transport System in the Basal Eudicot Model Species *Aquilegia coerulea*. *Plants*(6):799.



- Jaswal R, Kiran K, Rajarammohan S, Dubey H, Singh PK, Sharma Y, **Deshmukh R**, Sonah H, Gupta N, Sharma TR (2020) Effector Biology of Biotrophic Plant Fungal Pathogens: Current Advances and Future Prospective. *Microbiological Research* 23:126567.
- Ram H, Gandass N, Sharma A, Singh A, Sonah H, **Deshmukh R**, Pandey AK, Sharma TR (2020) Spatio-temporal distribution of micronutrients in rice grains and its regulation. *Critical Reviews in Biotechnology* 40(4):490-507.
- Singh RK, **Deshmukh R**, Muthamilarasan M, Rani R, Prasad M (2020) Versatile roles of aquaporin in physiological processes and stress tolerance in plants. *Plant Physiology and Biochemistry* 149:178-89.
- Shivaraj SM, Vats S, Bhat JA, Dhakte P, Goyal V, Khatri P, Kumawat S, Singh A, Prasad M, Sonah H, Sharma TR, **Deshmukh R** (2020) Nitric oxide and hydrogen sulfide crosstalk during heavy metal stress in plants. *Physiologia Plantarum* 168(2):437-55.
- Ansari WA, Chandanshive SU, Bhatt V, Nadaf AB, Vats S, Katara JL, Sonah H, **Deshmukh R** (2020) Genome Editing in Cereals: Approaches, Applications and Challenges. *International Journal of Molecular Sciences* 21(11):4040.
- Chaudhary J, Khatri P, Singla P, Kumawat S, Kumari A, Vikram A, Jindal SK, Kardile H, Kumar R, Sonah H, **Deshmukh R** (2019) Advances in Omics Approaches for Abiotic Stress Tolerance in Tomato. *Biology* 8(4):90.
- Singh A, Sharma AK, Singh NK, Sonah H, **Deshmukh R**, Sharma TR (2019) Understanding the Effect of Structural Diversity in WRKY Transcription Factors on DNA Binding Efficiency through Molecular Dynamics Simulation. *Biology* 8(4):83.
- Shivaraj SM, **Deshmukh R**, Sonah H, Bélanger RR (2019) Identification and characterization of aquaporin genes in *Arachis duranensis* and *Arachis ipaensis* genomes, the diploid progenitors of peanut. *BMC Genomics* 20(1):222.
- Chattopadhyay A, Purohit J, Tiwari KK, **Deshmukh R** (2019) Targeting transcription factors for plant disease resistance: Shifting paradigm. *Curr. Sci.* 117:1598-607.
- Rana N, Rahim MS, Kaur G, Bansal R, Kumawat S, Roy J, **Deshmukh R**, Sonah H, Sharma TR (2019) Applications and challenges for efficient exploration of omics interventions for the enhancement of nutritional quality in rice (*Oryza sativa* L.). *Critical Reviews in Food Science and Nutrition* 8:1-7.
- de Ronne M, Labbé C, Lebreton A, Sonah H, **Deshmukh R**, Jean M, Belzile F, O'Donoghue L, Bélanger R (2019) Integrated QTL mapping, gene expression and nucleotide variation analyses to investigate complex quantitative traits: a case study with the soybean-*Phytophthora sojae* interaction. *Plant Biotechnology Journal* 18(7):1492-4.
- Vats S, Kumawat S, Kumar V, Patil GB, Joshi T, Sonah H, Sharma TR, **Deshmukh R** (2019) Genome editing in plants: Exploration of technological advancements and challenges. *Cells*. 8(11):1386.
- Guerriero G, **Deshmukh R**, Sonah H, Sergeant K, Hausman JF, Lentzen E, Valle N, Siddiqui KS, Exley C (2019) Identification of the aquaporin gene family in *Cannabis sativa* and evidence for the accumulation of silicon in its tissues. *Plant Science* 287:110167.
- Coskun D, **Deshmukh R**, Sonah H, Shivaraj SM, Frenette-Cotton R, Tremblay L, Isenring P, Bélanger



- RR. Si permeability of a deficient Lsi1 aquaporin in tobacco can be enhanced through a conserved residue substitution. *Plant Direct* 3(8):e00163.
- Vishwakarma K, Mishra M, Patil G, Mulkey S, Ramawat N, Pratap Singh V, **Deshmukh R***, Kumar Tripathi D, Nguyen HT, Sharma S. Avenues of the membrane transport system in adaptation of plants to abiotic stresses. *Critical Reviews in Biotechnology* 39(7):861-83.
- Singh A, Singh PK, Sharma AK, Singh NK, Sonah H, **Deshmukh R**, Sharma TR (2019) Understanding the role of the WRKY gene family under stress conditions in pigeonpea (*Cajanuscajan* L.). *Plants* 8(7):214.
- Coskun D, **Deshmukh R**, Sonah H, Menzies JG, Reynolds O, Ma JF, Kronzucker HJ, Bélanger RR. In defence of the selective transport and role of silicon in plants. *New Phytologist*. doi/full/10.1111/nph.15764
- Kumawat S, Rana N, Bansal R, Vishwakarma G, Mehetre ST, Das BK, Kumar M, Yadav SK, Sonah H, Sharma TR, **Deshmukh R***(2019) Expanding Avenue of Fast Neutron Mediated Mutagenesis for Crop Improvement. *Plants* 8(6):164.
- Ram H, Kaur A, Gandass N, Singh S, **Deshmukh R**, Sonah H, Sharma TR (2019) Molecular characterization and expression dynamics of MTP genes under various spatio-temporal stages and metal stress conditions in rice. *PLoS One* 14(5):e0217360.
- Ram H, Singh BP, Katara J, Chopra R, Kumar P, Jaiswal R, Geetika, **Deshmukh R**, Sonah H (2019) A genome-wide resource of intron spanning primers compatible for quantitative PCR and intron length polymorphism in rice. *Indian J. Genet.* 79(2):499-502.
- Chaudhary J, Alisha A, Bhatt V, Chandanshive S, Kumar N, Mir Z, Kumar A, Yadav SK, Shivaraj SM, Sonah H, **Deshmukh R***(2019) Mutation breeding in tomato: advances, applicability and challenges. *Plants* 8(5):128.
- Bhat JA, Shivaraj SM, Singh P, Navadagi DB, Tripathi DK, Dash PK, Solanke AU, Sonah H, **Deshmukh R*** (2019) Role of silicon in mitigation of heavy metal stresses in crop plants. *Plants*. 8(3):71.
- Yadav MK, Aravindan S, Raghu S, Prabhukarthikeyan SR, Keerthana U, Ngangkham U, Pramesh D, Banerjee A, Adak T, Kar MK, Parameswaran C, **Deshmukh R**, Tiwari JK, Mohanty MR, Rath PC (2019) Assessment of genetic diversity and population structure of *Magnaporthe oryzae* causing rice blast disease using SSR markers. *Physiological and Molecular Plant Pathology*, 106:157-165
- Yadav MK, Aravindan S, Ngangkham U, Raghu S, Prabhukarthikeyan SR, Keerthana U, Marndi BC, Adak T, Munda S, **Deshmukh R**, Pramesh D (2019) Blast resistance in Indian rice landraces: Genetic dissection by gene specific markers. *PLoS one*, 23;14(1):e0211061.
- Coskun D, **Deshmukh R**, Sonah H, Menzies J, Reynolds O, Ma J, Kronzucker H, Bélanger R (2018) The controversies of silicon's role in plant biology. *New Phytologist*. <https://doi.org/10.1111/nph.15343>. (Highly prestigious Tansley review)
- Sevanthi AMV, Kandwal P, Kale BS, ..., **Deshmukh R**, et al. (2018) Whole Genome Characterization of a few EMS Induced Mutants of Upland Rice Variety Nagina 22 reveals staggeringly high frequency of SNPs with high phenotype plasticity. *Front. Plant Sci.*, In Press.
- Rasoolzadeh A, Labbé C, Sonah H, **Deshmukh R**, Belzile F, Menzies J, Bélanger R (2018) Silicon protects soybean plants against *Phytophthora sojae* by interfering with effector-receptor expression. *BMC Plant Biology*. 18:97.
- Agarwal G, Clevenger J, Pandey MK, Wang H, Shasidhar Y, Chu Y, Fountain JC, Choudhary D, Culbreath AK, Liu X, Huang G, Wang X, **Deshmukh R**, et al. (2018) High-density genetic map using whole-genome re-sequencing for fine mapping and candidate gene discovery for disease resistance in peanut. *Plant Biotechnology Journal*. doi.org/10.1111/pbi.12930.



- Patil G, Vuong TD, Kale S, Valliyodan B, **Deshmukh R**, et al. (2018) Dissecting genomic hotspots underlying seed protein, oil, and sucrose content in an interspecific mapping population of soybean using high-density linkage mapping. *Plant Biotechnology Journal*.doi.org/10.1111/pbi.12929.
- Tayade R, Nguyen T, Oh SA, Hwang YS, Yoon IS, **Deshmukh R**, et al. (2018) Effective Strategies for Enhancing Tolerance to High-Temperature Stress in Rice during the Reproductive and Ripening Stages. *Plant Breeding and Biotechnology*. 1;6(1):1-8.
- Ouellette S, Goyette MH, Labbé C, Laur J, Gaudreau L, Gosselin A, Dorais M, **Deshmukh RK**, Bélanger RR (2017) Silicon transporters and effects of silicon amendments in strawberry under high tunnel and field conditions. *Frontiers in Plant Science*.8;8:949.
- Ratcliffe S, Jugdaohsingh R, Vivancos J, Marron A, **Deshmukh R**, Ma JF, Mitani-Ueno N, Robertson J, Wills J, Boekschoten MV, Müller M (2017) Identification of a mammalian silicon transporter. *American Journal of Physiology-Cell Physiology*. 1;312(5):C550-61.
- Shivaraj SM, **Deshmukh RK**, Rai R, Bélanger R, Agrawal PK, Dash PK (2017) Genome-wide identification, characterization, and expression profile of aquaporin gene family in flax (*Linum usitatissimum*). *Scientific Reports*;7. 10.1038/srep46137
- Zargar SM, Nagar P, **Deshmukh R**, Nazir M, Wani AA, Masoodi KZ, Agrawal GK, Rakwal R (2017) Aquaporins as potential drought tolerance inducing proteins: Towards instigating stress tolerance. *Journal of Proteomics*. <https://doi.org/10.1016/j.jprot.2017.04.010>.
- Shivaraj SM, **Deshmukh R**, Bhat JA, Sonah H, Bélanger RR (2017) Understanding Aquaporin Transport System in Eelgrass (*Zostera marina* L.), an Aquatic Plant Species. *Frontiers in Plant Science*. 3;8:1334.
- Sonah H, **Deshmukh R**, Labbé C, Bélanger RR (2017) Analysis of aquaporins in Brassicaceae species reveals high-level of conservation and dynamic role against biotic and abiotic stress in canola. *Scientific Reports*.;7.10.1038/s41598-017-02877-9
- Deshmukh R***, Sonah H*, Belanger R (2016) Plant Aquaporins: genome-wide identification, transcriptomics, proteomics, and advanced analytical tools. *Front Plant Sci*, 7, 1896. *having equal contribution
- Song L, Nguyen LN, **Deshmukh R**, Patil GB, Prince SJ, et al. (2016). Soybean TIP gene family analysis and characterization of GmTIP1; 5 and GmTIP2; 5 in water transport. *Frontiers in Plant Science*, 7:1564.
- Sonah H, Zhang X, **Deshmukh R**, Borhan M, Fernando W, Bélanger R (2016) Comparative transcriptomic analysis of virulence factors in *Leptosphaeria maculans* during compatible and incompatible interactions with canola. *Front Plant Sci*, 7. doi.org/10.3389/fpls.2016.01784
- Vivancos J, **Deshmukh R**, Grégoire C, Rémus-Borel W, Belzile F, Bélanger R (2016) Identification and characterization of silicon efflux transporters in horsetail (*Equisetum arvense*). *J Plant Physiol*.doi:10.1016/j.jplph.2016.06.011
- Tomar R, Tiwari S, Naik B, Chand S, **Deshmukh R**, et al. (2016) Molecular and Morpho-Agronomical Characterization of Root Architecture at Seedling and Reproductive Stages for Drought Tolerance in Wheat. *PLoS One* 11(6): p.e0156528.
- Deshmukh R***, Sonah H*, Bélanger R (2016) Computational Prediction of Effector Proteins in Fungi: Opportunities and Challenges. *Front Plant Sci*7: 126. doi:10.3389/fpls.2016.00126. *having equal contribution
- Kadam S, Vuong T, Qiu D, Meinhardt C, Song L, **Deshmukh R**, et al. (2016). Genomic-assisted phylogenetic analysis and marker development for next generation soybean cyst nematode resistance breeding. *Plant Science*. doi:10.1016/j.plantsci.2015.08.015
- Deshmukh R***, Sonah H, Singh N (2016). Intron gain, a dominant evolutionary process supporting



high levels of gene expression in rice. *J Plant Biochem Biotech.* 25(2):142-146.

Deshmukh R, Vivancos J, Balkrishnan G, et al. (2015) A precise spacing between NPA domains of aquaporins is essential for silicon permeability in plants. *Plant Journal.*83(3):489-500.

Deshmukh R, and Belanger R (2015) Molecular evolution of aquaporins and silicon influx in plants. *Functional Ecology.* DOI: 10.1111/1365-2435.12570

Sonah H*,Vuong T*, Meinhardt C, **Deshmukh R**, et al. (2015) Genetic architecture of cyst nematode resistance revealed by genome-wide association study in soybean. *BMC Genomics* 16:593.*having equal contribution

Patil G, Babu V, **Deshmukh R**, et al. (2015) Soybean (*Glycine max*) SWEET gene family: Insights through comparative genomics, transcriptome profiling and whole genome re-sequencing analysis. *BMC Genomics.*BMC Genomics 2015, 16:520

Manavalan L*, Prince S*, Musket T, Chaky J, **Deshmukh R**, et al. (2015) Identification of novel QTL governing root architectural traits in an interspecific soybean population. *PLoS One*, 10(3), e0120490. *having equal contribution

Chaudhary J, Patil G, Sonah H, **Deshmukh R**, et al. (2015) Expanding omics resources for improvement of soybean seed composition traits. *Front Plant Sci.*doi: 10.3389/fpls.2015.0102

Deshmukh R*,Tomar R*, Naik K, et al (2014) Development of chloroplast-specific microsatellite markers for molecular characterization of alloplasmic lines and phylogenetic analysis in wheat. *Plant Breeding* 133 (1), 12-18. *having equal contribution

Deshmukh R, Sonah H, Patil G, et al (2014) Integrating omic approaches for abiotic stress tolerance in soybean. *Front Plant Sci.*doi: 10.3389/fpls.2014.00244

Deshmukh R, Vivancos J, Guérin V, et al (2013) Identification and functional characterization of silicon transporters in soybean using comparative genomics of major intrinsic proteins in Arabidopsis and rice. *Plant Mol Bio*, 83(4-5):303-15

Katara J, **Deshmukh R**, Singh NK, Kaur S (2012). Molecular typing of native *Bacillus thuringiensis* isolates from diverse habitats in India using REP-PCR and ERIC-PCR analysis. *J General Appl Microb*, 58(2): 83-94.

Deshmukh R*, Sonah H*,Sharma A, et al. (2011) Genome-wide Distribution and Organization of Microsatellites in Plants: An Insight of Marker Development in *Brachypodium*. *PlosOne*: 6 (6):e21298*having equal contribution

Sonah H, **Deshmukh R**, Singh VP, et al. (2011) Genomic resources in horticultural crops: Status, Utility and Challenges. *Biotechnological Advances.* *Biotech. Adv.* 29:199-209

Deshmukh R, Singh A, Jain N, et al. (2010) Identification of candidate genes for grain number in rice (*Oryza sativa* L.). *Funct Integr Genomics*10:339-347

Deshmukh R*, Singh H*, Singh A, et al. (2010) Highly variable SSR markers suitable for rice genotyping using agarose gels. *Mol Breeding* 25:359-364 *having equal contribution

Total research publications: Total 151 research papers published in reputed journals since 2010 and the details can be found at Google scholar with the link:<http://scholar.google.ca/citations?user=n81sJJsAAAAJ&hl=en&oi=ao>



September 9, 2021

Professor Rudra Pratap,
Vice Chancellor,
Plaksha University,
Mohali, India

Dear Professor Rudra Pratap,

I would like to apply for the position of Professor (Founding Faculty) in the program of Biological Systems Engineering at Plaksha University. My primary research is in the area of Bioenergy, which perfectly syncs with the Grand Challenge of Clean Energy being pursued at Plaksha's *Center for Clean Energy*.

I did my PhD in 2003 from the Department of Chemical and Biomolecular Engineering at The University of Houston, USA, under the supervision of Professor Vemuri Balakotaiah, following which I did my post-doctoral fellowship in Pulmonary Physiology and Medicine at The University of Texas Medical School in Houston, USA, in collaboration with The University of Houston, USA, from 2003 to 2005. I also did a M.E. (Hons.) in Chemical Engineering from the Indian Institute of Science Bangalore in 1999, and a B.E. (Hons.) in Chemical Engineering from Jadavpur University, Calcutta, in 1997.

I joined as an Assistant Professor in the Department of Chemical Engineering at the Indian Institute of Technology Kharagpur (which has recently been declared by the Government of India as an *Institute of Eminence*) in 2005, where I have been an Associate Professor since 2014. I am also a joint faculty at the Institute's School of Energy Science and Engineering, and the PK Sinha Center for Bioenergy and Renewables. My primary area of research is Bioenergy, where I focus on selecting biomaterials for renewable energy production, and producing 2G lignocellulosic and 3G algal biofuels.

Being the Principal Investigator of IIT-Kharagpur's *DBT-Pan IIT Center for Bioenergy* (with a 6-year funding of INR 44 million) that focuses on algal biofuels, and the *PK Sinha Center for Bioenergy and Renewables* (with a 5-year funding of INR 20 million) that focuses on lignocellulosic biofuels, I have a decade's experience in working on Bioenergy with multidisciplinary faculty from departments such as Biotechnology, Biosciences, Civil Engineering, Energy Science, and Agricultural Engineering. I have designed three multidisciplinary post-graduate level biological engineering courses – *Fundamentals of Bioenergy*, *Transport Processes in Physiological Systems*, and *Energy Systems Modelling* – two of which I teach in the Chemical Engineering department and the third one in the School of Energy Science & Engineering. I've also taught an undergraduate level core course on *Biochemical Engineering* at IIT Kharagpur continuously for the past 16 years. I've recently submitted a joint proposal (as its PI) on carbon capture and wastewater treatment with three faculty from two departments at The University of Newcastle, Australia. As the Institute Coordinator for joint academic programs with The University of Houston, I am also working on a joint proposal on Artificial Photosynthesis with my alma mater. I have also been the Institute Coordinator from 2010 to 2016 for the IIT Kharagpur-University of California Berkeley Summer Exchange Program, under which several undergraduate students from my lab had interned at UC Berkeley, while several UC Berkeley undergraduate students have summer-interned at my Bioenergy lab at IIT Kharagpur.

My book titled "Multiscale Bioenergy Engineering" will be published next year by *Morgan & Claypool Publishers, USA*. I have authored 46 peer-reviewed publications in high-impact journals and 5 book chapters, and have 5 patents on the technological innovations emerging from my bioenergy research. I have delivered many invited talks and oral



presentations in India and internationally, have received the Sigma Xi Research Achievement Award from the University of Houston (USA) for graduating as the best PhD student in the College of Engineering in 2003, and the Young Engineers Award from the Institution of Engineers (India) in 2009, have organized two international and many national conferences on bioenergy.

Four of my PhD students have completed their PhDs, while four others are in the concluding stages (fourth and fifth years) of their PhDs – all eight working on lignocellulosic and algal biofuels. Some of my talks on chemical reaction engineering and my bioenergy research have been video-recorded by IIT Kharagpur, and I have taught online courses on Biochemical Engineering and Heat and Mass Transfer.

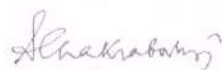
Being trained both in chemical engineering from my undergraduate till my PhD and in biomedical engineering during my post-doc, followed by my experience of teaching in the Department of Chemical Engineering as well as in the School of Energy, and the Center for Bioenergy in one India's top four IITs for the last sixteen years as Assistant and Associate Professor, and that of leading multi-disciplinary research groups as the Principal Investigator of bioenergy projects worth 63 million INR funded by government and private sources, I am confident of being able to lead a multidisciplinary bioenergy research group at Plaksha University aligning with the Grand Challenge of Clean Energy, teach innovative interdisciplinary courses on bioengineering, and develop collaborations with University of California Berkeley (with whom I have collaborated in the recent past), as well as with my alma mater University of Houston.

I have enclosed my detailed curriculum vitae, along with the contact details of three referees who know me and my work for the last one to two decades – my PhD advisor Professor Balakotaiah, the Former Director of Energy Biosciences Institute at the University of California Berkeley Professor Chris Somerville, and David West, Corporate Fellow, Technology & Innovation, SABIC, USA. I have also attached my teaching statement and my research statement.

If offered, I would be available to join the faculty position at Plaksha University from January 2022. I would be very glad to provide with any other information you need. I look forward to hearing from you.

Thanks a lot!

Sincerely,



Dr. Saikat Chakraborty
Associate Professor
Department of Chemical Engineering,
& School of Energy Science and Engineering,
& PK Sinha Center for Bioenergy and Renewables,
Indian Institute of Technology Kharagpur, India
Primary email: dr.s.chakraborty@gmail.com
Secondary email: schakraborty@uh.edu
Webpage: <http://www.iitkgp.ac.in/departement/CH/faculty/ch-saikat>
ORCID: <https://orcid.org/0000-0002-3871-0134>



Curriculum Vitae of
Dr. Saikat Chakraborty

Affiliation and Contact Information

Dr. Saikat Chakraborty
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Webpage: <http://www.iitkgp.ac.in/departement/CH/faculty/ch-saikat>
ORCID: <https://orcid.org/0000-0002-3871-0134>

Education

PhD in Chemical Engineering (2003), The University of Houston, USA

Dissertation: *Averaging Theory and Low-dimensional Models for Homogeneous and Catalytic Reactors*

GPA: **3.97/4.0**, Rank: Awarded Sigma Xi Research Achievement Award (2003) for Best PhD Student in College of Engineering, University of Houston, USA

M.E. (Hons.) in Chemical Engineering (1999), Indian Institute of Science, Bangalore, India

Thesis title: *Mixing and Segregation of Powders in Rotary Drums*

GPA: **7.2/8.0**, Rank: 2nd in Department

B.E. (Hons.) in Chemical Engineering (1997), Jadavpur University, Calcutta, India

GPA: **4.0/4.0**, Marks: **89.4%**, Rank: 2nd in Department of Chemical Engineering (Silver Medalist)

Higher Secondary Examination (1993), South Point High School, West Bengal Council of Higher Secondary Education, India

Marks: **80.3%**, Rank: 83 in the state of West Bengal, India

Madhyamik Pariskha (1991), South Point High School, West Bengal Board of Madhyamik Education, India

Marks: **84%**, Rank: 62 in the state of West Bengal, India

Academic Experience

- Associate Professor, Department of Chemical Engineering, IIT Kharagpur (2014-present)
- Associate Professor, School of Energy Science & Engineering, IIT Kharagpur (2015-present)
- Joint Faculty, PK Sinha Center for Bioenergy and Renewables, IIT Kharagpur (2009-present)



- Assistant Professor of Chemical Engineering, IIT Kharagpur (2005-2014)
- Post-doctoral fellow, Pulmonary, Critical Care & Sleep Medicine Division, Department of Internal Medicine, The University of Texas Medical School at Houston, USA, and Department of Chemical Engineering, The University of Houston, USA (2003 – 2005)

Awards and Recognition

- Honorary Member, European Federation of Chemical Engineering (EFCE): Sustainability Section, 2014-present
- Life Member, Indian Institute of Chemical Engineers
- Young Engineers Award, The Institution of Engineers (India), 2009
- Sigma Xi Research Achievement Award, University of Houston, 2003 (for best PhD student in College of Engineering, University of Houston)
- Young Investigator Travel Award, National Science Foundation (NSF), USA, 2002
- Hiralal Roy Silver Medal, Jadavpur University, India, 1997
- Washington Chapter Annual Scholarship, Jadavpur University, India, 1996
- “Low-dimensional Models...” by Chakraborty & Balakotaiah, *Chem. Engg. Science* (2002) cited by *AIChE Journal* in a 50-year review as one of the best papers on Mathematics in Chemical Engineering written between 1953-2003.

Research Areas

- **Bio-Energy:** 2G and 3G Biofuel production of Lignocellulosic and Algal Biofuels
- **Biomedical Engineering:** Pulmonary Physiology, Drug Delivery
- **Chemical Reaction Engineering:** Pattern Formation in Chemical and Biochemical Reactors

Ongoing projects

(1) Lignocellulosic Biofuel Production

- Biomass characterization and selection for large-scale Biofuel production
- Catalytic Conversion of Lignocelluloses to Fuel Products
- Enzymatic and Microbial Conversion of Lignocelluloses to Bioethanol

(2) Algal Biofuel Production

- High-density microalgal cultivation in pilot-scale photobioreactors
- Microalgae-based convergent technologies for carbon capture and wastewater treatment
- Bioelectricity production in Algal Fuel Cells

(3) Spatiotemporal Pattern Formation in Bioenergy Systems

- Chemical pattern formation in catalytic conversion of lignocelluloses
- Biochemical pattern formation in enzymatic hydrolysis of lignocelluloses

Teaching Experience at IIT-Kharagpur

At the undergraduate level

Theory Courses: (i) Biochemical Engineering (4th Year core course, 2012 – 2021), (ii) Heat Transfer (2nd Year UG core course, 2007 – 2010), (iii) Transport Processes in Physiological



Systems (4th Year elective, self-designed course, taught 2006 – 2016), (iv) Fundamentals of Bioenergy (4th Year elective, self-designed course, 2011-2103, 2017-2020).

Laboratory Courses: Fluid Mechanics (2nd Year), Energy Lab. (2nd Year), Process Control (3rd Year).

At the postgraduate level

Theory Courses: (i) Fundamentals of BioEnergy (M.Tech. elective, self-designed course, 2011-2013, 2017-2020), (ii) Transport Processes in Physiological Systems (M.Tech. elective, self-designed course, taught 2006-2016), (iii) Biochemical Engineering Fundamentals (M.Tech. elective, 2006 – 2011), (iv) Energy Systems Modelling (self-designed M.Tech course, 2017-2020)

Laboratory Courses: M.Tech Numerical Design (2006 – 2021), M.Tech. Seminar (2019-2020).

Highlights of courses taught at IIT Khargapur

1. **Fundamentals of Bioenergy** (2011-13, 2017-2020): This self-designed, post-graduate level elective course covers greenhouse effect and climate change, the history of biofuels, lignocellulosic and algal biofuel production through cultivation of energy crops and algae, their pre-treatment, hydrolysis, fermentation, pyrolysis, transesterification, and process integration in a biorefinery.
2. **Biochemical Engineering** (2006-2021): This undergraduate core course covers enzyme kinetics, enzyme immobilization, origin of life forms, microbial growth modelling, receptor-mediated endocytosis, prey-predator models, design and stability analysis of biochemical reactors and fermenters.
3. **Transport Processes in Physiological Systems** (2006-2010, 2014-16): This self-designed, post-graduate level elective course quantifies transport and reactions in human physiological systems, with special attention to ion channels, cellular transporters, receptor-ligand binding, cell signaling, and the pulmonary system.
4. **Energy Systems Modelling** (2016-2020): post-graduate level self-designed multidisciplinary core course which is co-taught every Spring semester at the School of Energy Science and Engineering. This course into five modules that deal with modelling of various forms of energy, namely, (i) Thermodynamic Systems, (ii) Mechanical Energy Systems, (iii) Chemical Energy Systems, (iv) Bioenergy Systems, (v) Electrical Energy Systems.
5. **Numerical Methods laboratory** (2006-2021): post-graduate level core course on numerical solution of a system of coupled linear and non-linear algebraic equations, and ordinary and partial differential equations. The problems are picked from chemical engineering processes, which include non-linear equations with multiple solutions as well as hyperbolic, parabolic and elliptical differential equations.
6. **Heat Transfer** (2007-2010): undergraduate level core course with three standard modules: Conduction, Convection, and Radiation.

Academic Administration at Indian Institute of Technology Khargapur

1. Member, Institute Post-Graduate Curriculum Committee, January 2021- present
2. Institute Coordinator, IIT Khargapur–University of Houston Collaborative Program, 2018-present



3. Institute Coordinator, DBT-Pan IIT Center for Bioenergy, 2014-2021
4. Coordinator, PK Sinha Center for Bioenergy and Renewables, IIT Kharagpur, 2009-present
5. Coordinator, PK Sinha Center for Bioenergy and Renewables, IIT Kharagpur, 2009-present
6. Coordinator, DBT National Workshop on Bioenergy, October 17-18, 2019
7. Coordinator, International Summer Course on '*Biofuels: Policy and Law*' jointly offered by IIT Kharagpur and University of California Berkeley, June-July 2014.
8. Coordinator, International Symposium on Bioenergy, January 4-6, 2010
9. Coordinator, National Workshop on Renewable Energy, February 2010
10. Coordinator, National Symposium on 'Energy for the Powerless', March 2010
11. Coordinator, National Symposium on Bioenergy, October 2009
12. Co-coordinator, International Symposium on New Horizons in Bioenergy Research, January 14-16, 2013
13. Coordinator, IIT Kharagpur-University of California Summer Exchange Program, 2010-2016
14. Convener, Undergraduate Studies, Dept. of Chemical Engineering, IIT Kharagpur, 2006-2012
15. Faculty Advisor, Undergraduate Studies, Department of Chemical Engineering, IIT Kharagpur, 2008-2013, 2020-present.
16. Faculty Advisor, M.Tech Program, Dept. of Chemical Engineering, IIT Kharagpur, 2016-2018

Ongoing Funded Research Projects (as Principal Investigator)

1. ***DBT Pan-IIT Center for Bioenergy***, Role: Principal Investigator, Funding amount: **INR 44.3 million**, Period: December 2014-March 2021, Funding agency: Department of Biotechnology, Government of India.
2. ***PK Sinha Center for Bioenergy***, Role: Principal Investigator, Funding amount: **INR 20 million**, Period: September 2019 – 2024. Funding agency: IIT Foundation

Books, Patents, Journal Publications, Book Chapters, Conference Talks

A. Books

1. **Multiscale Bioenergy Engineering**, by Saikat Chakraborty, *Morgan & Claypool Publishers, USA*, 2022 (forthcoming).

B. Book Chapters

1. S. Roy, **S. Chakraborty**, A Kinetic Framework for Microwave-Irradiated Catalytic Conversion of Lignocelluloses to Biofuel Precursors by Employing Protic and Aprotic Ionic Liquids, *Biorefineries: A Step Towards Renewable and Clean Energy, Clean Energy Production Technologies*, Springer Nature, pp 173-215 (2021).
2. V. Ramya, S. K. Dutta, **S. Chakraborty**, Modelling of reaction and transport in microbial fuel cells, *Microbial Fuel Cell*, Springer, pp 269-283 (2018).



3. T. Sanyal, **S. Chakraborty**, Multiscale Modelling and Simulation of simultaneous Oxygen and Nitric Oxide uptake in the Human Lungs and its application to Methemoglobin Anemia, *Computer-aided Chemical Engineering*, Elsevier, 30, pp 1372-76 (2012).
4. **S. Chakraborty**, Transport and Reaction in Physiological Systems: A Multiscale Averaging Approach by Saikat Chakraborty *Special issue on Biotechnology & Bioengineering, Nehru Museum Science & Technology*, IIT Kharagpur, pp 67-75 (2006)
5. **S. Chakraborty** and V. Balakotaiah, Spatially Averaged Multi-Scale Models for Chemical Reactors, *Advances in Chemical Engineering*, Elsevier, 30, pp 205-297 (2005).

C. Patents

1. **S. Chakraborty** and A. Gaikwad, A process for ionic liquid based catalytic conversion of cellulose to fuel products, Indian Patent, Granted, Certificate No. 314202, dated 25/04/2013.
2. **S. Chakraborty** and R.K. Pal, A process for enzymatic hydrolysis of cellulosic biomass for bioethanol production, Indian Patent, Filing number: Ref: 509/KOL/2013 dated 03/05/2013.
3. **S. Chakraborty** and P.K. Singh, A micro-reactor based energy-efficient process for cellulosic ethanol production, Filing number: Ref: 961/KOL/2015)
4. **S. Chakraborty** and S.K. Paul, Process of production of biofuel precursors from Sunn hemp, Indian Patent, Application number: 201631036686, dated October 26, 2016.
5. **S. Chakraborty**, and A. K. Mehta, An integrated process for high-density mixotrophic cultivation and rapid harvesting of microalgae in photobioreactors, Indian Patent, Application number: 202031033010 dated July 31, 2020.

D. Publications in Refereed Journals (h index=17, and i10 index=23)

1. A. K. Mehta, **S. Chakraborty**, Multiscale integration of mixotrophic microalgal cultivation, lipid synthesis, rapid biomass harvesting, and nutrient recycling in pilot-scale photobioreactors, *Algal Research*, 53, 102146 (2021). *IF=4.401*
2. **S. Chakraborty**, S. K. Paul, Interaction of reactions and transport in lignocellulosic biofuel production, *Current Opinion in Chemical Engineering*, 29, 104-121 (2020). *IF=5.163*
3. A. Nair, **S. Chakraborty**, Synergistic effects between autotrophy and heterotrophy in optimization of mixotrophic cultivation of *Chlorella sorokiniana* in bubble-column photobioreactors, *Algal Research*, 46, 101799 (2020). *IF=4.401*.
4. S.K. Dutta, **S. Chakraborty**, Multiscale dynamics of hemicellulose hydrolysis for biofuel production, *Industrial & Engineering Chemistry Research*, 58 (21), 8963-8978 (2019). *IF=3.720*.
5. S.K. Paul, **S. Chakraborty**, Mixing effects on the kinetics of enzymatic hydrolysis of lignocellulosic Sunn hemp fibres for bioethanol production, *Chemical Engineering Journal*, 377, 120103 (2019). *IF=13.232*.
6. S. Roy, **S. Chakraborty**, Comparative study of the effectiveness of protic and aprotic ionic liquids in microwave-irradiated catalytic conversion of lignocellulosic June grass to biofuel precursors, *Bioresource Technology Reports*, 8, p 100338 (2019).



7. S.K. Dutta, **S. Chakraborty**, Mixing effects on the kinetics and the dynamics of two-phase enzymatic hydrolysis of hemicellulose for biofuel production, *Bioresource Technology*, 259, pp 276-285 (2018). *IF*=9.642.
8. S.K. Paul, **S. Chakraborty**, Microwave-assisted ionic liquid-mediated rapid catalytic conversion of non-edible lignocellulosic Sunn hemp fibres to biofuels, *Bioresource Technology*, 253, pp 85-93 (2018). *IF*=9.642.
9. **S. Chakraborty**, P.K. Singh, P. Paramashetti, Microreactor-based mixing strategy suppresses product inhibition to enhance sugar yields in enzymatic hydrolysis for cellulosic biofuel production, *Bioresource Technology*, 237, pp 99-107 (2017). *IF*=9.642.
10. S. Shariff, **S. Chakraborty**, Two-scale model for quantifying the effects of laminar and turbulent mixing on algal growth in loop photobioreactors, *Applied Energy*, 185, pp 973-984 (2017). *IF*=9.746.
11. S.K. Dutta, **S. Chakraborty**, Pore-scale dynamics of enzyme adsorption, swelling and reactive dissolution determine sugar yield in hemicellulose hydrolysis for biofuel production, *Scientific Reports*, 6: 38173 (2016). *IF*=5.133.
12. D. Mathur, **S. Chakraborty**, Kinetics of Microwave-based Ionic Liquid-mediated Catalytic Conversion of Ricinus Communis to Biofuel Products, *Chemical Engineering Transactions*, AIDIC, 52, pp 967-972 (2016).
13. A. Bose, **S. Chakraborty**, Mathematical Modelling of the Effects of Circadian Rhythm on Microalgal Growth in Phototrophic and Mixotrophic Cultures, *Chemical Engineering Transactions*, AIDIC, 52, pp 955-960 (2016).
14. S.K. Dutta, **S. Chakraborty**, Kinetic analysis of two-phase enzymatic hydrolysis of hemicellulose of xylan type, *Bioresource Technology*, 198, pp 642-650 (2015). *IF*=9.642.
15. **S. Chakraborty**, S. Raju and RK Pal, A multiscale three-zone reactive mixing model for engineering a scale separation in enzymatic hydrolysis of cellulose, *Bioresource Technology*, 240, pp 140-147 (2014). *IF*=9.642.
16. A. Gaikwad, **S. Chakraborty**, Mixing and temperature effects on the kinetics of alkali metal catalyzed, ionic liquid based batch conversion of cellulose to fuel products, *Chemical Engineering Journal*, 240, pp 109-115 (2014). *IF*=13.232.
17. RK. Pal and **S. Chakraborty**, A novel mixing strategy for maximizing yields of glucose and reducing sugar in enzymatic hydrolysis of cellulose, *Bioresource Technology*, 148, pp 611-614 (2013). *IF*=9.642.
18. T. Sanyal and **S. Chakraborty**, Multiscale analysis of simultaneous uptake of two reactive gases in the human lungs and its application to methemoglobin anemia, *Computers and Chemical Engineering*, 59, pp 226-242 (2013). *IF*=4.000.
19. A. Agrawal and **S. Chakraborty**, A kinetic study of pyrolysis and combustion of microalgae *Chlorella vulgaris* using Thermogravimetric Analysis, *Bioresource Technology*, 128, pp 72-80 (2013). *IF*=9.642.
20. T. Sanyal and **S. Chakraborty**, Multiscale analysis of hypoxemia in Methemoglobin Anemia, *Mathematical Biosciences*, 241 (2), 167-180 (2013). *IF*=1.649.
21. A. Gaikwad and **S. Chakraborty**, Mixing effects on the kinetics of enzymatic hydrolysis of Avicel for batch production of cellulosic ethanol, *Industrial & Engineering Chemistry Research*, 52 (11), 3988-99 (2013). *IF*=3.573.
22. **S. Chakraborty** and A. Gaikwad, Production of Cellulosic Fuels, *Proceedings of National Academy of Science, India Sect. A Phys. Sci.*, 82(1), pp 59-69 (2012). *IF*=0.754.



23. A. Chaudhury and **S. Chakraborty**, Dynamics of mixing-limited pattern formation in non-isothermal homogeneous autocatalytic reactors: a low-dimensional computational analysis, *Industrial & Engineering Chemistry Research*, 50 (8), pp 4335-43 (2011). *IF*=3.573.
24. T. Sanyal and S. Chakraborty, Micro- and meso-scale analyses for quantifying hypoxemia in Methemoglobinemia, *Lecture Notes in Engineering and Computer Science*, 2192 (1), pp 2640-45 (2011)
25. A. Chaudhury and **S. Chakraborty**, Dynamic simulation of mixing-limited symmetric and asymmetric patterns in homogeneous autocatalytic reactors, *Industrial & Engineering Chemistry Research*, 49 (21), 10517-23 (2010). *IF*=3.573.
26. **S. Chakraborty**, Aniket, A. Gaikwad, Mixing effects in cellulase-mediated hydrolysis of cellulose for bioethanol production, *Industrial & Engineering Chemistry Research*, 49 (21), 10818-25 (2010). *IF*=3.573.
27. S. Doorwar, S. Neogi and **S. Chakraborty**, A multiscale model for quantifying helium diffusion in porous unsintered glass, *Canadian Journal of Chemical Engineering*, 88 (2), 1-8 (2010). *IF*=1.687.
28. Aniket and S. Chakraborty, Mathematical modeling of cellulase-mediated hydrolysis of cellulose for bioethanol production, *International J. of Anaerobic Digestion and Renewable Energy*, 1(1), 219-226 (2010)
29. A. Gupta and **S. Chakraborty**, Linear stability analysis of high and low-dimensional models for describing mixing-limited pattern formation in homogeneous autocatalytic reactions, *Chemical Engineering Journal*, 145 (3), 399-411 (2009). *IF*=10.652.
30. RR. Pandiyan, **S. Chakraborty**, G. Kundu, S. Neogi, Curing kinetics of medium reactive unsaturated polyester resin used for liquid composite molding process, *Journal of Applied Polymer Science*, 114 (4), 2415 - 2420 (2009). *IF*=2.52
31. D. Mukherjee and **S. Chakraborty**, An analytical method for quantifying transport and reaction of anti-tumor drugs in human tissues, *Journal of Chemical Engineering of Japan*, 42 (1), s226-s233 (2009). *IF*=0.651
32. P. Saurabh and **S. Chakraborty**, Mathematical modeling of reactive transport of anti-tumor drugs through electro-active membranes, *Asia-Pacific Journal of Chemical Engineering*, 4(3), pp 345-355 (2009). *IF*=1.396
33. S. Roy, K. Kargupta, **S. Chakraborty**, S. Ganguly, Preparation of polyaniline nanofibers and nanoparticles via simultaneous doping and electro-deposition, *Materials Letters*, 62 (16), 2535-2538 (2008). *IF*=3.204.
34. A. Suresh, **S. Chakraborty**, S. Ganguly, K. Kargupta, Low-dimensional models for describing mixing effects in reactive extrusion of polypropylene, *Chemical Engineering Science*, 63 (14), 3788-3801 (2008). *IF*=3.871.
35. A. Gupta and **S. Chakraborty**, Dynamic simulation of mixing-limited pattern formation in homogeneous autocatalytic reactions, *Chemical Product and Process Modeling*, 3 (2), Article 9 (2008). *IF*=0.368.
36. **S. Chakraborty**, V. Balakotaiah and A. Bidani, Multiscale model for pulmonary oxygen uptake and its application to quantify hypoxemia in Hepatopulmonary Syndrome, *Journal of Theoretical Biology*, 244, pp 190-207 (2007). *IF*=2.327.
37. V. K. Salloum, **S. Chakraborty**, A. Bidani, Effect of temperature on superoxide production by THP1 monocytes, *Chest*, 128 (4), pp 166S (2005). *IF*=9.657.



38. **S. Chakraborty**, and V. Balakotaiah, Multi-mode low-dimensional models for non-isothermal homogeneous and catalytic reactors, *Chemical Engineering Science*, 59, pp 3695-3724 (2004). *IF*=3.871.
39. **S. Chakraborty**, V. Balakotaiah and A. Bidani, Diffusing capacity reexamined: relative roles of diffusion and chemical reaction in red cell uptake of O₂, CO, CO₂, and NO, *Journal of Applied Physiology*, 97, pp 2284-2302 (2004). *IF*=3.140.
40. **S. Chakraborty**, and V. Balakotaiah, A novel approach for describing mixing effects in homogeneous reactors, *Chemical Engineering Science*, 58, pp 1053-1061 (2003). *IF*=3.871.
41. V. Balakotaiah and **S. Chakraborty**, Averaging theory and low-dimensional models for chemical reactors and reacting flows, *Chemical Engineering Science*, 58, pp 4769-4786 (2003). *IF*=3.871.
42. **S. Chakraborty**, and V. Balakotaiah, Two-mode models for describing mixing effects for homogeneous reactors, *AIChE Journal*, 48 (11), pp 2571-2586 (2002). *IF*=3.463.
43. **S. Chakraborty**, and V. Balakotaiah, Low-dimensional models for describing mixing effects in laminar flow tubular reactors, *Chemical Engineering Science*, 57, pp 2545-2564 (2002). *IF*=3.871.
44. V. Balakotaiah and S. Chakraborty, A novel approach for describing micromixing effects in homogeneous reactors, *Chemical Engineering Education*, 36(4), pp 250-257 (2002).
45. **S. Chakraborty**, P. R. Nott and J. Ravi Prakash, Analysis of radial segregation of granular mixtures in a rotating drum, *European Physical Journal E*, 1(4) pp 265-273 (2000). *IF*=1.812.
46. **S. Chakraborty**, K. Kargupta and A. Bhowal, Modeling of air-lift reactors based on bubble dynamics, *Indian Journal of Chemical Technology*, 5, pp187-191 (1998). *IF*=0.614.

E. Invited Lectures

1. Invited Keynote Lecture titled “Bifurcating with a Purpose: 40 Years of Bridging Transport and Reaction with Mathematics” at the *AIChE Annual Meeting 2021* in Boston, USA, November 2021 (forthcoming).
2. Invited Keynote Lecture titled “Multiscale Engineering for Production of Lignocellulosic Biofuels” at Symposium on *Challenges in the Production of 2G Bioethanol* in Indian Institute of Technology Tirupati, India, August 2021.
3. Invited Keynote Lecture titled “Combatting Climate Change with Biofuels” at *Recent Advances in Environmental Biotechnology* workshop at Indian Institute of Technology Kharagpur, India, 2021
4. Invited Keynote Lecture titled “Multiscale Bioenergy Engineering” at *Molecular Breeding of Industrial Crops* workshop in *Indian Council for Agricultural Research*, Kolkata, India, 2020
5. Invited Lecture titled “Bioenergy Research at DBT Pan-IIT Center for Bioenergy, India” at *Mission Innovation Conference* in Yantai, China, 2019
6. Invited Lecture titled “Pattern Formation in Biofuel Systems during Batch Hydrolysis of Lignocelluloses” at Special Session in Honour of Professor Dan Luss, 4th North



American Symposium on Chemical Reaction Engineering (NASCRE 4) in Houston, USA, 2019

7. Invited Lecture titled “Rapid, ionic liquid-mediated one-pot catalytic synthesis of biofuel precursors from non-edible lignocelluloses” at *Advances at the Interface of Biology and Chemistry*, in Bhaba Atomic Research Center, Mumbai, India, 2019
8. Invited Keynote Lecture titled “A rapid microwave-assisted catalytic-microbial route to producing bioethanol from non-edible lignocelluloses” at *International Workshop on Hybrid Technologies for Conversion of Lignocellulosic Biomass to Biofuel*, in Jadavpur University, Kolkata, India, 2019
9. Invited Lecture titled “Multiscale Processes in Lignocellulosic and Algal Biofuel Systems” at *International Conference on Renewable and Alternate Energy*, Guwahati, India, 2018
10. Invited Lecture titled “Spatiotemporal Oscillations in Batch Reactors promote Lignocellulosic Biofuel Production” at *DBT National Workshop on Bioenergy*, IIT Roorkee, India, 2018
11. Invited Lecture titled “Multiscale Non-equilibrium Processes in Lignocellulosic and Algal Biofuel Systems” at *11th National Frontiers of Engineering Symposium*, IIT Bombay, in Mumbai, India, 2017
12. Invited Lecture titled “Multiscale Phenomena in Cellulosic Biofuel Production” at *TEQIP-II Workshop* in GVP College of Engineering, in Visakhapatnam, India, 2017
13. Invited Lecture titled “Kinetics of Algal and Cellulosic Biofuel production: a multi-scale view” at *Indo-Finish Workshop on Bioenergy*, IIT Delhi, New Delhi, India, 2016
14. Invited Lecture titled “Production of 2G Biofuels from Lignocellulosic Biomass” at *Workshop on Recent Advances in Energy Harvesting and Water Treatment Technologies*, in Jadavpur University, Kolkata, India, 2016
15. Invited lecture titled “Multiscale Modelling of Cellulose Hydrolysis for Bioethanol Production” at *Energy Biosciences Institute, University of California Berkeley, USA*, 2012
16. Invited lecture titled “Bioenergy Landscape in India: Opportunities and Challenges” at *Energy Biosciences Institute, University of California Berkeley, USA*, 2009
17. Invited talk on Bioenergy at *Energy Center, Purdue University, USA*, 2009

F. Selected oral presentations made (as Speaker) at International Conferences

1. *7th Global Conference on Catalysis, Chemical Engineering and Technology* in London, UK, September 2019, “Rapid, ionic-liquid mediated catalytic conversion of lignocellulosic Sunn hemp fibres to biofuel precursors”
2. *4th North American Symposium on Chemical Reaction Engineering* in Houston, USA, March 2019, “Multiscale Dynamics of Hemicellulose Hydrolysis for Biofuel Production”
3. *23rd International Conference on Chemical Reactors* in Ghent, Belgium, November 2018, “Temporal Oscillations leading to Chaotic Strange Attractors in semi-batch reactors promote lignocellulosic biofuel production”
4. *2nd International Conference Sustainability, Energy and Environmental Sciences* in Cambridge, UK, September 2018, titled “Multiscale Dynamics of Hemicellulose Hydrolysis for Biofuel Production”



5. *4th Green and Sustainable Chemistry Conference* in Berlin, Germany, May 2017, "Rapid microwave-assisted catalytic conversion of Sunn hemp fibre - a non-food energy crop - to cellulosic biofuels"
6. *IEEE International Conference on Green Energy and Applications* in Singapore, March 2017, "Hemicellulose hydrolysis for biofuel production: a multiscale view"
7. *International Conference on Bioresource Technology for Bioenergy, Bioproducts & Environmental Sustainability* in Sitges, Spain, October 2016, "A microreactor based energy-efficient process for enzymatic hydrolysis of cellulose for biofuel production"
8. *24th European Biomass Conference and Exhibition* in Amsterdam, Netherlands, June 2016, "Kinetics of Two-phase Enzymatic Hydrolysis of Hemicellulose"
9. *23rd European Biomass Conference and Exhibition* in Vienna, Austria, June 2015, "A Micromixing Strategy for Maximizing Sugar Yield for Cellulosic Ethanol Production"
10. *10th European Symposium on Biochemical Engineering Sciences* in Lille, France, September 2014, "Micromixing as a tool for maximizing bioethanol production from cellulose"
11. *International Conference on Mathematics in Chemical Kinetics and Engineering (MaCKiE)* in IIT Madras, India, January 2013, "Multiscale Modeling of Methemoglobin Anemia induced by Reactive Uptake of NO in the Human Lungs"
12. *22nd European Symposium on Computer Aided Process Engineering* in London, UK, June 2012, "Multiscale Modelling and Simulation of simultaneous Oxygen and Nitric Oxide uptake in the Human Lungs and its application to Methemoglobin Anemia"
13. *19th International Symposium on Alcohol Fuels* in Verona, Italy, October 2011, "Modelling mixing effects in enzymatic hydrolysis of cellulose for biofuel production"
14. *World Congress on Engineering* in London, UK, July 2011, titled "Micro- and meso-scale analyses for quantifying hypoxemia in Methemoglobinemia"
15. *21st International Symposium on Chemical Reaction Engineering* in Philadelphia, USA, June 2010, "Mixing effects in Cellulase-mediated Hydrolysis of Cellulose for Bioethanol Production"
16. *21st International Symposium on Chemical Reaction Engineering* in Philadelphia, USA, June 2010, "Dynamics of mixing-limited pattern formation in non-isothermal homogeneous autocatalytic reactors"
17. *20th International Symposium on Chemical Reaction Engineering* in Kyoto, Japan, September 2008, "Temporal evolution of mixing-limited spatial patterns in non-isothermal homogeneous reactors"
18. *20th International Symposium on Chemical Reaction Engineering* in Kyoto, Japan, September 2008, "An analytical method for quantifying transport and reaction of anti-tumor drugs in human tissues"
19. *101st International Conference of American Thoracic Conference* in San Diego, USA, 2005, "Kinetics of the Respiratory Burst in Monocytes and Macrophages"
20. *XXXV International Congress of Physiological Sciences* in San Diego, USA, 2005, "Kinetics of Superoxide and NO production during Alveolar Macrophage Activation"
21. *HSEMB Annual Meeting* in Houston, USA, 2005, "Kinetics of Superoxide and NO Perfusion during Alveolar Macrophage Activation"
22. *HSEMB Annual Meeting* in Houston, USA, 2005, "Diffusing Capacity Reexamined: Relative Roles of Diffusion and Chemical Reaction in the Red Cell Uptake of O₂, CO, CO₂, and NO"



23. *100th International Conference of American Thoracic Conference* in Orlando, USA, 2004, "Theoretical Analysis of the Components of Pulmonary Oxygen Diffusing Capacity" (paper # 3561)
24. *18th International Symposium on Chemical Reaction Engineering (ISCRE 18)* in Chicago, USA, 2004, "Determinants of Pulmonary Oxygen Uptake: A Novel Multi-scale Engineering Approach" (paper # 38)
25. *AIChE Annual Meeting* in Austin, USA, November 2004, "Theoretical Analysis of Diffusing Capacity of the Red Blood Cell" (paper # 448j)
26. *HSEMB Annual Meeting* in Houston, 2004, "Oxygen Uptake Abnormalities in Patients with Hepatopulmonary Syndrome"
27. *AIChE Annual Meeting* in San Francisco, USA, November 2003, "Chemical Reactor Models Revised" (paper # 510e)
28. *AIChE Annual Meeting* in San Francisco, USA, November 2003, "Mathematical Modeling of Oxygen Transport and Acid-base Regulation in Normal Tissues and Tumors" (paper # 478c)
29. *17th International Symposium on Chemical Reaction Engineering (ISCRE 17)* in Hong Kong, China, August 2002, "A Novel Approach for describing Mixing Effects in Homogeneous Reactors" (paper # 137)
30. *AIChE Annual Meeting* in Indianapolis, USA, November 2002, "Averaging Theory and Multi-mode Models for Chemical reactors and Reacting flows" (paper # 273f)
31. *North American Society for Chemical Reaction Engineering (NASCRE)-I Meeting* in Houston, USA, January 2001, "Two-Mode Models for Homogeneous Reactors with Micromixing Effects"
32. *AIChE Annual Meeting* in Reno, USA, November 2001, "Mixing Limited Pattern Formation in Homogeneous Autocatalytic Reactions" (Paper #293f)
33. *AIChE Annual Meeting* in Reno, USA, November 2001, "Two-Mode Models for Describing Mixing Effects in Turbulent Flow Tubular Reactors" (Paper #359c)
34. *AIChE Annual Meeting* in Los Angeles, USA, November 2000, "Micromixing Effects in Laminar Flow Tubular Reactors" (Paper #175a)
35. *AIChE Annual Meeting* in Dallas, USA, November 1999, "Segregation of Granular Mixtures: A Model for Rotating Drums" (paper #142g)
36. *International Symposium on Recent Advances in Solid Mechanics (WRASMech)*, IIT Madras, India, December 1998, "Mixing and Segregation of Granular Materials"

Journal and Grant Reviewing, and PhD Thesis Examination

- Member, Sectional Committee on Chemical and Biochemical Engineering, Global Initiatives of Academic Networks (GIAN), Government of India, 2015-present
- PhD Thesis examiner for chemical engineering students from *Monash University*, Australia, *The University of Newcastle*, Australia, *Indian Institute of Technology Bombay*, and *Institute of Chemical Technology Mumbai, India*
- Journal reviewer for *Scientific Reports*, *Chemical Engineering Journal*, *Industrial and Engineering Chemistry Research*, *Bioresource Technology*, *Chemical Engineering Science*, *Bioresource Technology Reports*, *Algal Research*



- Grant reviewer for *Department of Biotechnology, Government of India, Ministry of Education, Government of Chile, Indian Institute of Technology Bombay, and Indian Institute of Technology Kharagpur*

Doctoral and Master's Thesis Guidance

Doctoral Thesis Guidance Completed: 4 (3 Single Guidance + 1 Joint Guidance),
Ongoing: 4 (2 Single Guidance + 2 Joint Guidance).

M.Tech. Thesis Guidance Completed: 39; Ongoing: 4

Served on Doctoral Thesis Committee Completed: 5; Ongoing: 8

| | Name of Doctoral Student Supervised | PhD thesis title | Status of Thesis |
|----|-------------------------------------|---|-----------------------------------|
| 1. | Ashwin P. Gaikwad | Mixing Effects on Enzymatic and Catalytic Conversion of Cellulose to Fuel Products | PhD awarded in 2013 |
| 2. | Sajal K. Dutta | Multiscale Dynamics of Hemicellulose Hydrolysis for Biofuel Production | PhD awarded in 2019 |
| 3. | Souvik K. Paul | Catalytic and Enzymatic Conversion of Lignocellulosic Sunn hemp fibres to Biofuel | PhD awarded 2020 |
| 4. | V. Ramya* | Development of Portable Microscale Power Generation Devices using Electrogenic Bacteria | PhD awarded 2020 |
| 5. | Arun K. Mehta | High-density Microalgal Cultivation and Rapid Harvesting in Pilot-scale photoreactors | Ongoing (in 5 th year) |
| 6. | Subhrajit Roy | Microwave-irradiated Catalytic Conversion of Lignocelluloses to Furanic Biofuels | Ongoing (in 5 th year) |
| 7. | Sourav Mondal [#] | Co-saccharification of Holocellulose and Co-fermentation of Pentoses and Hexoses to Ethanol | Ongoing (in 5 th year) |
| 8. | Gourab Ghosh [@] | Bioelectricity generation using Algal Fuel Cells: an experimental and modelling study | Ongoing (in 4 th year) |

*Co-supervised with Professor D. Das, Department of Biotechnology, IIT Kharagpur

[#]Prof. S. Neogi, Dept. of Chemical Engineering, IIT Kharagpur, is co-supervising with me

[@]Prof. A. Atta, Dept. of Chemical Engineering, IIT Kharagpur, is co-supervising with me

| | Name of Masters Student Supervised | M. Tech. Thesis title | Year of Completion |
|----|------------------------------------|--|--------------------|
| 1. | Pranav Naik | Reaction-Transport Modelling of Algal Pyrolysis in Pyrolizer | 2021 |
| 2. | Abhishek Varma | Three-zone Mixing Model for Hemicellulose Hydrolysis | 2021 |



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|-----|-----------------------|---|------|
| 3. | Vipin Kumar | Kinetic Modelling of Metabolic Reactions for Algal Lipid Synthesis | 2021 |
| 4. | Abhishek Meena | Modelling of Light Reactions in Algal Photosynthesis in Photobioreactors | 2021 |
| 5. | Anurag Shakya | Microwave-irradiated one-pot fractionation of non-edible lignocellulose to biofuel precursors using Deep Eutectic Solvents | 2020 |
| 6. | Sreyashi Ghosh | Synergy between autotrophy and heterotrophy in glycerol-mediated mixotrophic cultivation of microalgae in bubble column photobioreactors | 2020 |
| 7. | Sudheer C. Kora | Enzymatic hydrolysis of hemicellulose extracted from <i>Bambusa bambos</i> | 2020 |
| 8. | Luv Rathore | Study on Design of Raceway pond for growth of microalgae | 2020 |
| 9. | Pankaj Kumar Gautam | Catalytic conversion of non-edible lignocellulosic biomass (<i>Bambusa bambos</i>) into biofuel products | 2019 |
| 10. | Ananya Mandal | Growth of <i>Chlorella sorokiniana</i> and CO ₂ sequestration in nitrogen source | 2019 |
| 11. | Lokesh V | Effect of surfactant (Tween 80) on enzymatic hydrolysis of lignocellulose | 2019 |
| 12. | Radheshyam Tard | Bioprospecting of <i>Chlorella sorokiniana</i> for carotenoids | 2019 |
| 13. | Anshu Dutta | Metabolic modeling of the effects of CO ₂ on mixotrophic microalgal cultivation | 2018 |
| 14. | Harshabh Tiwari | Ionic liquid mediated catalytic conversion of <i>Ricinus communis</i> to biofuel precursors | 2018 |
| 15. | Ranabothu V. Reddy | Second generation biofuel production from lignocellulosic biomass (<i>Miscanthus giganteus</i>) | 2018 |
| 16. | Abhijit Das | Mixing effects on enzymatic hydrolysis of cellulose for biofuel production | 2017 |
| 17. | Devanshu Mathur | Microwave assisted conversion of lignocellulose to fuel products | 2017 |
| 18. | Abhishek Bose | Kinetic modeling of microalgal growth, and enzymatic hydrolysis of lignocellulosic biomass | 2017 |
| 19. | Ramavatar Kumar | Experimental measurements of algal growth in two phase photobioreactor | 2017 |
| 20. | Arun Kumar T | Experimental studies on ionic liquid based catalytic conversion of lignocellulose to fuel precursors | 2016 |
| 21. | Pawan M. Paramashetti | Micro-reactor based enzymatic hydrolysis of cellulose in the production of bioethanol | 2016 |
| 22. | Sabbir Ahmed | Quantifying the effects of the concentrations of carbon dioxide and oxygen, light intensity, and mixing on algal growth in bubble column photobioreactors | 2016 |
| 23. | Prasun Kumar Singh | A novel mixing strategy for enzymatic hydrolysis of cellulose in the production of bioethanol | 2015 |
| 24. | Venkata Chekumuki | Catalytic conversion of lignocellulosic biomass to fuel products | 2015 |



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|-----|-----------------------|---|------|
| 25. | Shoaib Shariff | Two-mode for describing mixing effects in algal photobioreactors | 2015 |
| 26. | Rishi Mehan | Mixing effects on the anaerobic digestion of waste to biogas & conversion of methane to methanol using methanotropic bacteria | 2015 |
| 27. | Souvik Kumar Paul | A novel experimental strategy for catalytic conversion of lignocellulosic biomass to fuel products using ionic liquids | 2014 |
| 28. | D. S. Narayana Raju | Modelling and experimental studies on the kinetics of bioethanol production from cellulosic substrates | 2014 |
| 29. | Vasu Malhotra | Analysis of voidage characteristics in a bubble column | 2014 |
| 30. | Anik Kumar Chaturbedi | Catalytic conversion of lignocellulose to glucose for biofuel production | 2013 |
| 31. | Ramendra Kishor Pal | Experimental and modeling studies on enzymatic hydrolysis of cellulose and hemicelluloses for bioethanol production | 2013 |
| 32. | Tanmoy Sanyal | Formation and stability of mixing-limited patterns in homogeneous autocatalytic reactors | 2013 |
| 33. | Ankit Agarwal | Experimental and modeling studies on algal pyrolysis reactor | 2013 |
| 34. | Sashank Kasiraju | Experimental studies on kinetics of enzymatic hydrolysis and chemical conversion of cellulose and lignocellulose to fuel products | 2012 |
| 35. | Pratik Patel | Effect of phosphoric acid pretreatment on the rheology and dynamics of cotton depolymerization during enzymatic hydrolysis | 2012 |
| 36. | Arkaprava Dan | Mixing effects on the kinetics of enzymatic hydrolysis of carboxymethyl cellulose for bioethanol production | 2012 |
| 37. | Pallavi Jayannavar | Dynamics of rheological properties of biomass slurries during biofuel production | 2011 |
| 38. | Anwasha Chaudhury | Pattern formation in homogeneous autocatalytic reactions | 2010 |
| 39. | Aniket | Bioethanol production from cellulosic biomass through enzymatic hydrolysis | 2010 |
| 40. | Amit Kumar Gupta | Mathematical modeling of the delivery of neurological drugs across human blood-brain | 2009 |
| 41. | Shashvat Doorwar | Multi-scale analysis of helium transport in porous unsintered glass used in optical fiber making | 2009 |
| 42. | Vivek Khetan | Analysis of hemodynamic instability in dialyzers | 2009 |
| 43. | Ankur Gupta | Spatiotemporal evolution of mixing-limited patterns formed in homogeneous autocatalytic reactors | 2008 |

Served on Doctoral Thesis Committees of the following PhD students at IIT Kharagpur:

| Student Name | Department at IIT Kharagpur | PhD Thesis area | Thesis Status |
|--------------|-----------------------------|-----------------|---------------|
|--------------|-----------------------------|-----------------|---------------|



| | | | | |
|-----|-------------------------|--|---|-------------------|
| 1. | Arvinder Singh | Physics | Microbial Fuel Cells | Completed in 2016 |
| 2. | Anjani Devi Chintagunta | Advanced Technology Development Center | Bioenergy | Completed in 2018 |
| 3. | S Prashant Jeevan Kumar | Agriculture and Food Engg. | Microbial Biotechnology | Completed in 2019 |
| 4. | Supriya | Chemical Engineering | Catalysis and Reaction Engineering | Completed in 2019 |
| 5. | Seema Kumari | Mathematics | Fluid Mechanics | Completed in 2019 |
| 6. | Mrinmoy Dhar | Mechanical Engineering | Fluid Mechanics | Completed in 2021 |
| 7. | Rashmi Dubey | Mathematics | Fluid Mechanics | Completed in 2020 |
| 8. | Kalyan Saha | Mathematics | Bio-Fluid Mechanics | Ongoing |
| 9. | Abhishek Sharma | Chemical Engineering | Microfluidics & CFD | Ongoing |
| 10. | Tumbalam Gooty Mythri | Civil Engineering | Multiscale Modelling of Biomechanical Systems | Ongoing |
| 11. | Banashree Samanta | Chemical Engineering | Multiphase Flow | Ongoing |
| 12. | Nazneen | Environmental & Science Engineering | Pesticides in the Environment | Ongoing |
| 13. | Santosh Kumar | PK Sinha Center for Bioenergy & Renewables | Bioenergy | Ongoing |
| 14. | Awadhesh Sonakar | Chemical Engineering | Catalysis and Reaction Engineering | Ongoing |
| 15. | Anirban Roy | Energy Sciences & Engineering | Multiphase Microfluidics | Ongoing |

Online Courses and Video Lectures

1. SWAYAM Course, *Design and Analysis of Ideal Chemical Reactors*
2. IIT Kharagpur Channel, *Microwave-based technology for Lignocellulosic Biofuels*
3. NPTEL Video Course, *Biochemical Engineering*, 24 lectures
4. NPTEL Web Course, *Advanced Heat and Mass Transfer*, 40 lectures

Press Coverage

- (i) DBT National Workshop on Bioenergy: “National workshop on how to check carbon emission”, Business Standard, October 17, 2019
- (ii) Featured by the Government of India as one of India’s success stories in clean energy innovation in “Mission Innovation India: country report 2018”
- (iii) Bioethanol from Sunn hemp fibre: “IIT Kharagpur Research Team Turns Hemp Fibre into Clean Fuel”, The Times of India, March 25, 2018



- (iv) Microwave-based technology for lignocellulosic fuels: "IIT Kharagpur team taps microwave radiation to create clean energy from Sunn Hemp", Financial Express, February 27, 2018;
"IIT-KGP taps microwave radiation to create clean energy from Sunn Hemp", Economic Times, February 26, 2018
- (v) Waste to Biofuel: Biofuel from Bamboo shavings: IIT Kharagpur student wins prestigious award at energy conference in Paris, Asian Age, February 21, 2018
- (vi) Hemicellulosic Fuel: "Fuel from water hyacinth? IIT-Kharagpur shows the way", The Times of India, February 20, 2017
- (vii) DBT-Pan IIT Center for Bioenergy: "IITs start virtual centre on biofuel technology", Business Standard, September 3, 2015
- (viii) PK Sinha Center for Bioenergy and Renewables: "Bio-energy centre at tech hub", The Telegraph, January 4, 2010.

Academic References

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Teaching Statement of Dr. Saikat Chakraborty

Teaching Philosophy

My teaching philosophy which I have slowly developed over the last sixteen years of teaching several engineering courses in the Department of Chemical Engineering as well as in the School of Energy Science & Engineering at IIT Kharagpur, starting from undergraduate level *Heat Transfer*, and *Biochemical Engineering*, to post-graduate level courses such as *Bioenergy*, *Energy Systems Modelling*, and *Physiological Transport*, is using a careful blend of broad epistemic questions in chemical and energy engineering with in-depth quantitative treatment of the subject. A fine balance of deep research questions and sweeping teaching questions keeps the students tethered to the fundamentals, while spiking their passion for learning and providing them a historical view of the discipline. For example, my *Bioenergy* course opens with climate change, carbon life-cycle analysis, the earth's energy budget, and the history of biofuels before zooming in on quantitative modelling of various second and third generation bioenergy processes. My *Physiological Transport* course uses everyday examples from human physiology, while my *Biochemical Engineering* course connects to the fundamentals of transport and reaction, the history of chemical reactors, and the thermodynamics of life formation. I have served and continue to serve on the Doctoral Committees of PhD students from departments such as Agriculture and Food Engineering, Chemical Engineering, Civil Engineering, Energy Sciences and Engineering, Environmental Science and Engineering, Physics, Mathematics, Mechanical Engineering, and Bioenergy. My detailed teaching plan at Plaksha University is presented at the end of this document.

The things I pay careful attention to while teaching my courses include:

- (i) discussing larger issues and grand challenges, such as global warming and the current climate crises, and showing how engineers can play an important role in saving the planet, which helps the students connect the text with the world,
- (ii) bridging the gap between engineering disciplines by illustrating how the same fundamental processes of diffusional and convective transport coupled with bio/chemical reactions across multiple scales govern biochemical and physiological systems, how processes that are structurally and functionally different can be guided by the same universal principles,
- (iii) connecting the larger epistemic questions with the problems being solved in class by alternately zooming out and zooming in.

Teaching Experience (2006-2021)

The major courses I've taught over the last 16 years at IIT Kharagpur are described below. I have also taught *Transport Phenomena* and *Chemical Reaction Engineering* online before.

1. **Fundamentals of Bioenergy** (2011-13, 2017-2020): This self-designed, post-graduate level elective course covers greenhouse effect and climate change, the history of biofuels, lignocellulosic and algal biofuel production through cultivation of energy crops and algae, their pre-treatment, hydrolysis, fermentation, pyrolysis, transesterification, and process integration in a biorefinery.
2. **Biochemical Engineering** (2006-2021): This undergraduate core course on biochemical process engineering covers enzyme kinetics, enzyme immobilization, origin of life forms,



- microbial growth modelling, receptor-mediated endocytosis, prey-predator models, design and stability analysis of biochemical reactors and fermenters.
3. **Transport Processes in Physiological Systems** (2006-2010, 2014-16): This self-designed, post-graduate level elective course quantifies transport and reactions in human physiological systems, with special attention to ion channels, cellular transporters, receptor-ligand binding, cell signalling, and the pulmonary system.
 4. **Energy Systems Modelling** (2017-2020): post-graduate level self-designed multidisciplinary core course which I co-teach every Spring semester at the School of Energy Science and Engineering, IIT Kharagpur. I have divided this course into five modules that deal with modelling of various forms of energy, namely, (i) Thermodynamic Systems, (ii) Mechanical Energy Systems, (iii) Chemical Energy Systems, (iv) Bioenergy Systems, (v) Electrical Energy Systems.
 5. **Numerical Methods laboratory** (2006-2021): post-graduate level core course on numerical solution of a system of coupled linear and non-linear algebraic equations, and ordinary and partial differential equations. The problems are picked from chemical engineering processes, which include non-linear equations with multiple solutions as well as hyperbolic, parabolic and elliptical differential equations.
 6. **Heat Transfer** (2007-2010): undergraduate level core course with three standard modules: Conduction, Convection, and Radiation.

Teaching Interdisciplinary Courses

Based on my experience of teaching three interdisciplinary postgraduate level courses – *Bioenergy*, *Physiological Transport*, and *Energy Systems Modelling* – to students not only from Chemical Engineering but also from departments as varied as Energy Science and Engineering, Mechanical Engineering, Biotechnology and Biosciences, Agricultural and Food Engineering, and Mathematics, I have developed an innovative framework for teaching interdisciplinary courses on big themes such as *Climate Change*, *Sustainable Energy* (including *Bioenergy*), and *Physiological Transport and Reaction*, which is described below:

1. Divide the course into 4-5 thematic modules in which each module brings in a fresh angle and perspective to the central theme of the course.
2. Share online resources such as educational videos and online problem solving, slides and notes with the students through a course website or over email.
3. Tether the disparate viewpoints to the big fundamental problems (e.g. *Climate Change*) and their solutions (e.g. *Sustainable Energy*) the course is trying to address.
4. Encourage students to utilise the supplementary materials and online resources to learn the interdisciplinary aspects of the course, e.g., chemical engineers can learn more biology and chemistry, while biologists can learn transport and reaction engineering.
5. Convince the students that complex large-scale contemporary problems, such as the contemporary climate crisis, require multi-pronged innovations and conversation between and collaboration with various related disciplines of sciences and engineering.
6. Divide the class into several groups with three to four students from three to four different disciplines in each group, and ask each group to pick a problem related to the course. Each group will engage in interdisciplinary collaboration to work on an innovative project, which they will present to the class at the end of the semester.
7. The project shall contribute to a third of the course's evaluation for grades, and the groups shall be graded not only on the quality of their project and presentation but also on the nature and extent of interdisciplinary collaboration they could bring to the work.



8. The goal is to create resonance between the various disciplines and promote intersection of scientific viewpoints, which leads to synergy in understanding and problem-solving so that the whole turns out to be greater than the sum of its parts.

My Teaching Plan at Plaksha University

The Program of Biological Systems Engineering at Plaksha University would provide me with a great platform to use my sixteen years of teaching experience at one of India's top four IITs to teach engineering courses in the areas of Bioenergy, Biochemical Engineering, Physiological Transport and Reaction, Engineering Mathematics. Here is a list of core and elective courses I would like to teach at Plaksha University, and a list of topics I could possibly cover in these courses.

- (1) **Cell Biology for Engineers:** Formation of the first bacterial cell and the evolution of prokaryotes; RuBisCO, Carbonic Anhydrase, ATP-synthase enzymes and the roles in the evolution of anoxygenic and oxygenic photosynthesis; Evolution of eukaryotes and cellular organization; Enzyme Kinetics, Modelling of soluble and immobilized enzymes; Cell differentiation and Microbial growth kinetics; Bioreactor Design and Stability; Receptor-ligand binding, and Kinetics of receptor-mediated endocytosis.
- (2) **Nature's Machines:** Non-equilibrium Thermodynamics of Life's Evolution; Second Law of Thermodynamics, Entropy and Evolution; Human Cell as a factory: cellular structure and function; Cellular Transport through Ion Channels, Passive Transporters, and ATP pumps; Circulatory and Respiratory Systems: oxygen and carbon transport between lungs, blood and tissues; Cell signalling and Magnetoreception; Musculoskeletal system.
- (3) **Mathematics for Continuous Systems:** Solving Partial Differential Equations using (a) Laplace Transform, (b) Similarity Transform, (c) Fourier Transform, (d) Method of Lines. Application of these techniques to solving parabolic, elliptical and hyperbolic partial differential equations to real-life engineering problems in Heat Transfer, Spatiotemporal Dynamics of Waves and Signals, Chemical Reaction Systems, Mass and Momentum Transport in fluids, Biological Transport, Reaction and Separation Processes.
- (4) **Combatting Climate Change with Bioenergy (Technical Elective):** Gaia and the Planet's Climate System; Greenhouse Effect and Global Warming; Climate Modelling and Chaotic Systems; Life Cycle Analysis of Fossil Fuels vs. Biofuels; Generations of Biofuels; First Generation Biofuels: Food vs. Fuel debate; Second Generation Biofuels: biochemical, catalytic and thermochemical conversion of non-edible lignocelluloses to bioethanol and high-value platform chemicals; Third Generation Biofuels: cultivation of microalgae and cyanobacteria in photobioreactors and raceway ponds, and extraction of algal lipids, carbohydrates and proteins for production of biodiesel, biohydrogen, and value-added co-products; Design and Analysis of Bioreactors and Photobioreactors; Waste-to-Wealth, Biorefinery and Bioeconomy.

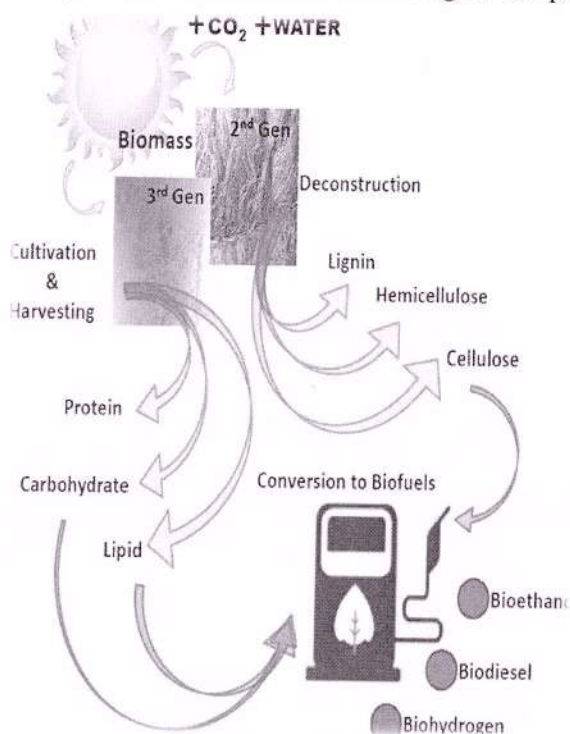


Research Plan of Dr. Saikat Chakraborty for the Grand Challenge of Clean Energy

Motivation: Climate change is the biggest threat to our species and our planet today. Carbon dioxide levels in our atmosphere have risen to a 3 million year high at 415 ppm, leading to an accompanying global temperature rise of 1.2°C, which is resulting in catastrophic weather worldwide, such as devastating wildfires in Australia and California, hurricanes in the North America and Asia, droughts in India and Africa, and severe floods in Asia and Europe. At this moment of reckoning, scientists must not look away from the fragile future of our planet, and must employ their research and teaching to fight this climate crisis by developing teaching and research programs in sustainable energy.

My current research is aligned with the Grand Challenge area of *Clean Energy*, which perfectly syncs with the research planned at Plaksha University's *Center for Clean Energy*.

Background: My research at the Indian Institute of Technology Kharagpur over the past several years has been focussed on finding new biomaterials for large scale biofuel production and developing catalytic and biochemical technologies for producing 2nd and 3rd generation carbon-neutral biofuels



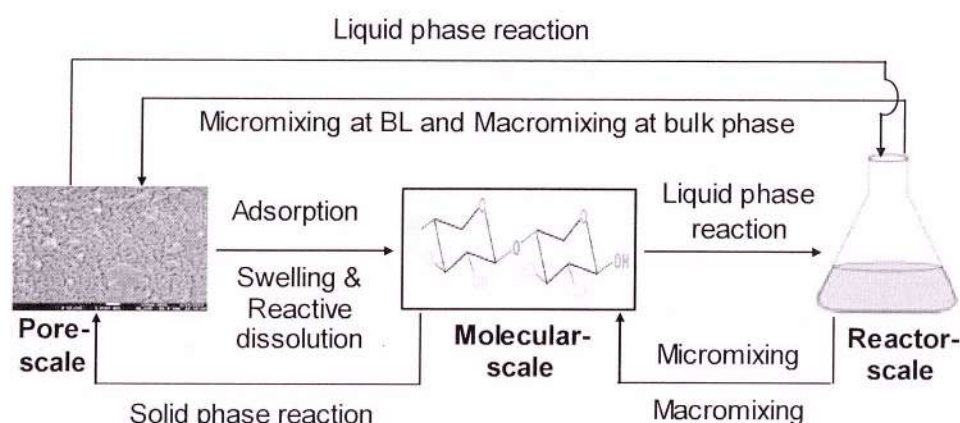
from lignocellulosic and algal biomass. In addition to being the Principal Investigator at IIT-Kharagpur's *DBT-Pan IIT Center for Bioenergy* (which focusses on algal biofuels) as well as at its *PK Sinha Center for Bioenergy and Renewables* (which focuses on lignocellulosic biofuels), I have recently submitted a joint proposal (as its PI) on developing microalgae-based convergent technologies on carbon capture, bioenergy production and wastewater treatment with three faculty from two departments at The University of Newcastle, Australia. Below are my research philosophy and a brief plan of the research I want to pursue at Plaksha University.

Multiscale Approach to Bioenergy Systems: My current research on lignocellulosic and algal biofuels has centred around catalytic and enzymatic hydrolysis of lignocelluloses to alcoholic and furanic fuel precursors, microbial fermentation of sugars to ethanol, algal cultivation in

photobioreactors, lipid extraction and algal pyrolysis. While the technologies for producing second (lignocellulosic) and third (algal) generation biofuels are different, I have created a unifying multiscale framework built on coupled experimental and modelling analyses for understanding and quantifying these bioenergy systems. For example, lignocellulose hydrolysis – regardless of whether it is performed catalytically or enzymatically – is a multiscale process constituting of the micro (molecular), the meso (pore or particle) and the macro (reactor) scales, in which the transport and reaction processes are coupled across the scales through regulatory mechanisms that lead to complex spatiotemporal dynamics, which we exploit to engineer substantial increase in product yields and/or reduction in process time. Similarly, microalgal cultivation in photobioreactors is a multiscale phenomenon in which we regulate the reactor scale parameters, such as nitrogen, organic and inorganic carbon loading, and illumination, to affect reaction pathways and elemental fluxes at the metabolic

scale, which, in turn, alter the biomass yield and the macromolecular (lipid, carbohydrate, protein) compositions at the cellular scale. The multiscale framework that I have introduced for developing and quantifying biofuel systems is the central basis of my book titled “Multiscale Bioenergy Engineering”, which will be published by *Morgan & Claypool Publishers, USA*, next year.

We measure the concentrations of biofuel precursors such as glucose, xylose, fructose, total sugars, hydroxymethylfurfural, levulinic acid, formic acid, algal lipids at the reactor scale using UV-vis spectrophotometry and HPLC, the pore structure, crystallinity and the pore diffusion and adsorption-desorption parameters at the pore scale using XRD, FESEM, BET, BJH, DLS, particle size analyzer, etc., and perform molecular scale analyses using FTIR and NMR. Our experimental results from various scales are fed into multiscale mathematical models that simulate the coupled mass transport and reactions, providing us with insights on how to tap in the synergy between the scales to experimentally enhance yields and/or accelerate processes.



Some of the technological innovations emerging from my multiscale approach to bioenergy systems include: (i) employing a multiscale experimental-theoretical analyses to show that three-quarters of the soluble sugars produced from hemicellulose hydrolysis are generated from pore-scale depolymerization, (ii) innovating a one-pot feedstock-agnostic catalytic technology for rapidly depolymerizing raw recalcitrant lignocelluloses to biofuel precursors in less than 46 minutes, (iii) minimizing product inhibition to enhance sugar yields in enzymatic hydrolysis by regulating mixing in macro- and micro-reactors, (iv) developing an integrated pilot-scale process for high-density microalgal cultivation and rapid biomass harvesting in 20 minutes.

Clean Energy Research Projects I plan to pursue at Plaksha University

1. Algal Biofuel Production

The proposal contains 4 parts: (i) high-density microalgal cultivation and rapid harvesting, (ii) wastewater treatment using microalgae, (iii) conversion of macroalgae or seaweeds to furanic fuels, (iv) artificial photosynthesis that combines algal light reactions with chemical catalysis.

(i) High-density microalgal cultivation and rapid harvesting in photobioreactors

My lab has developed an integrated technology for high-density mixotrophic microalgal cultivation in 25 litre pilot-scale bubble photobioreactors (run for a week) followed by rapid, low-cost harvesting of microalgae in 20 minutes. The input reactor scale parameters such as nitrogen, organic and inorganic carbon loadings and the illumination are carefully optimized such that they activate specific metabolic pathways, such as for enhanced neutral lipid production at the cellular scale by activating specific genetic transcription factors (such as ROC-40).



In the next phase, we plan to scale-up this process to a 1000 litre photobioreactor pilot-plant, in which we plan to target not only triacylglycerol (TAG) for biodiesel production, but also other high-value metabolites such as β -carotenes and ω -fatty acids.

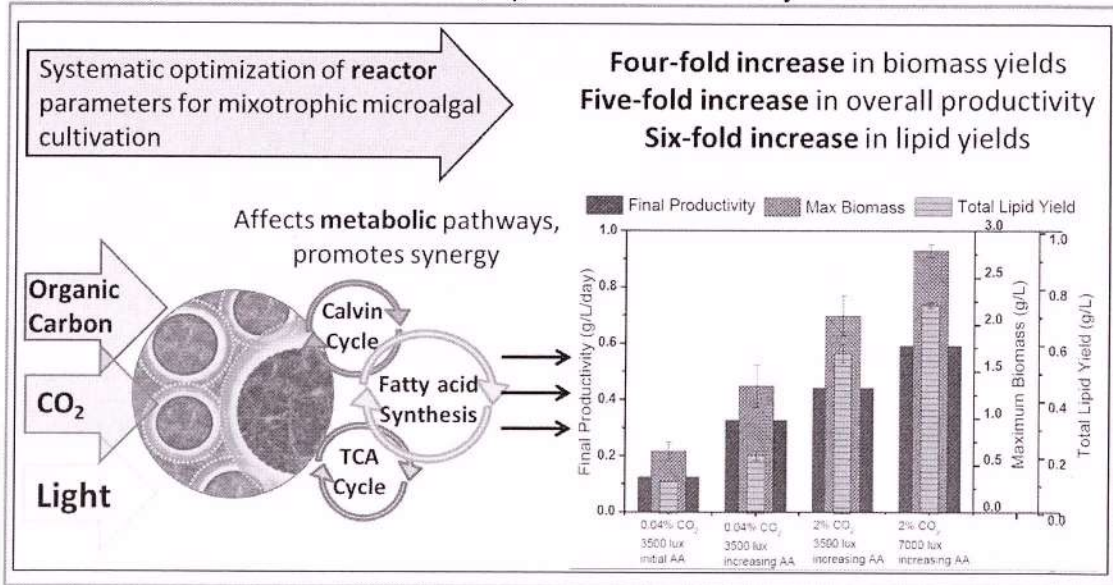
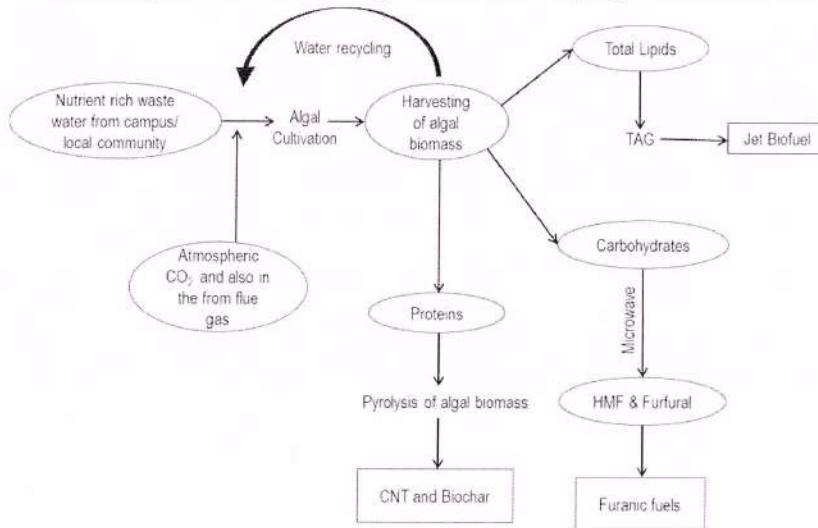


Figure taken from Nair and Chakraborty, *Algal Research*, 46, 101799 (2020).

(ii) **Convergent technology for wastewater treatment using microalgae**

As mentioned above, this project proposal has already been submitted jointly with three professors from The University of Newcastle, in which we plan to together develop a microalgae-based convergent technology for wastewater treatment, carbon capture and biodiesel production. The objectives of this project include isolating fast-growing, lipid-rich



extremophilic microalgal strains (tolerant to high temperatures and carbon dioxide levels), and employing these freshwater and marine strains to capture 3-5% carbon dioxide for biomass growth while significantly reducing the COD of the municipal wastewater. The high-density algal mass cultivation in 1,000-

10,000 litre photobioreactors would be followed by rapid harvesting, and a biorefinery approach towards producing jet and furanic fuels, and value-added co-products such as CNT, N-rich biochar; this project comes under the umbrella of **Waste-to-Wealth** initiatives.

(iii) **Microwave-mediated catalytic conversion of macroalgae or seaweeds to furanic fuels**

(iv) Artificial Photosynthesis

This project shall be performed in collaboration with my alma mater University of Houston, in which Algal Fuel Cells (with nano-rods) shall be used to direct excess electrons from algal photosynthesis (photosynthetic efficiency <10%, and the algal surface always shows negative zeta potential values) to catalytically convert carbon dioxide from flue gases to methanol. The specific steps of this negentropic process are: (i) production of electricity using algal photosynthesis, (ii) storing the electrical energy in a battery/ capacitor and using it to convert CO₂ into methanol catalyzed by Cu-Zn complexes, (iii) preparing Cu-based catalyst at regulated temperatures, pressure and pH to enhance the selectivity of methanol formation.

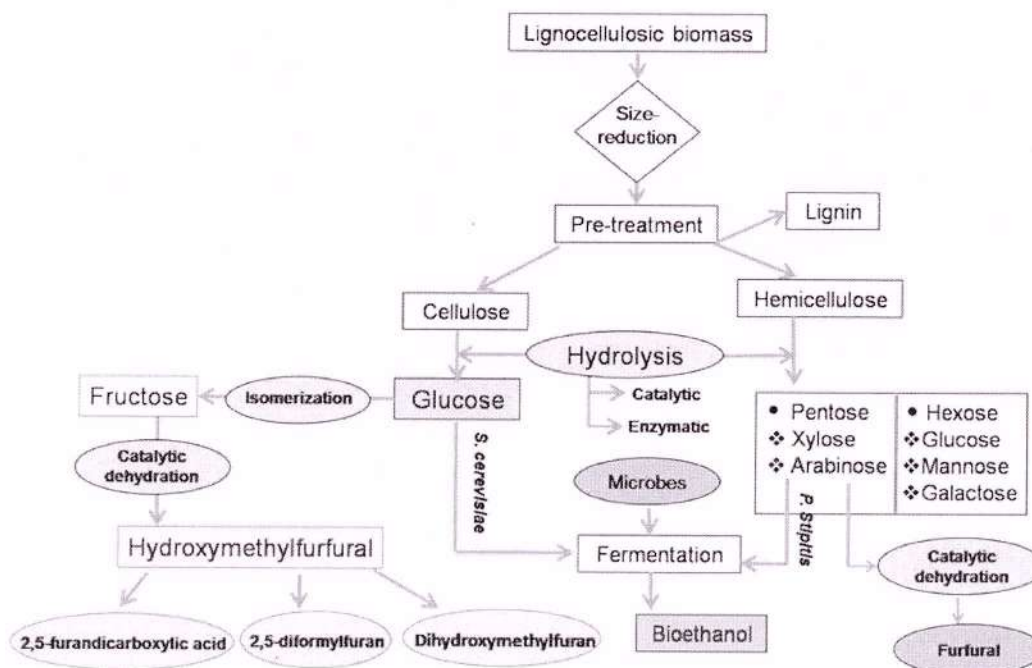
We shall use algal culture in the anode chamber of the Microbial Fuel Cell and any oxidising agent like KMnO₄ in the cathode chamber. The electricity, thus generated by extracting the negative charge from microalgal surface, can be stored in a battery/capacitor. Stainless steel mesh or graphite will be used as the electrodes connected to the battery/capacitor using stainless steel wires. Nafion membrane is used as the proton exchanger between the cathode and anode chambers. This electric energy, subsequently can be used to produce methanol by hydrogenation of CO₂ in a fixed-bed continuous flow reactor. The reaction is catalysed by a mixture of CuO (50 wt.%), ZnO (15 wt.%), along with traces of ZrO₂ and Ga₂O₃, at 190-250°C and a pressure of 4-7 MPa. Using synthetically prepared phosphine-borane organocatalysts can hydrogenate CO₂ to methanol at 70-100°C and 1-2 atm pressure with yields of 70-80%.

2. Lignocellulosic (2G) Biofuel Production

- (i) Catalytic Conversion to Biofuel Precursors: Crystalline recalcitrant lignocelluloses with high degree of polymerization offer serious challenges to hydrolysis due to the strong intrapolymeric β -1-4 glycosidic bonds in the cellulose and hemicellulose polymers, and the interpolymeric covalent, hydrogen and ether bonds between lignin, hemicellulose, cellulose in the lignocellulose. Exploiting the ability of polar supramolecules to rapidly absorb, transfer and dissipate microwave energy from the reactor scale down to the molecular scale, we have innovated an ionic liquid-mediated one-pot synthesis technology to catalytically convert any raw, untreated lignocellulosic biomass to biofuel precursors in less than 46 minutes. The Government of India featured this (patented) technology as one of India's success stories in clean energy innovation in "Mission Innovation India: country report 2018".

The second phase of this project shall involve the use of inexpensive laboratory-made Protic Ionic Liquids (PIL) and Deep Eutectic Solvents (DES) for the catalytic conversion of any locally available untreated biomass as well as any mixture of biomasses to make this feedstock-agnostic technology affordable and scalable. Furanic fuel precursors obtained from lignocelluloses such as hydroxymethylfurfural and levulinic acid, which are high-value platform chemicals, can generate a product: reactant cost ratio of 200. This microwave-based catalytic technology – along with product recovery and purification, catalyst and solvent recycling – shall be employed for the large-scale production of furanic fuels.





(ii) **Pre-treatment, Enzymatic Hydrolysis, and Microbial Fermentation:** The pre-treatment of lignocelluloses followed by enzymatic hydrolysis of cellulose and hemicellulose, and microbial fermentation of monomeric sugars such as glucose and xylose to bioethanol has become a standard three-step process for cellulosic ethanol production over the last decade. The innovations in our lab have centred around developing engineering interventions for minimizing product inhibition during hydrolysis through smart reactor mixing strategies, and maximizing the use of pore surface area and pore volume in solid cellulose and hemicellulose during their enzymatic depolymerization to soluble sugars.

The next phase of this project shall focus on developing technologies for converting the holocellulose (i.e., the cellulose polymers sheathed by hemicellulose) to bioethanol, rather than separating the cellulose from the hemicellulose. This shall require innovating new pre-treatment technologies that only removes the lignin from the lignocellulose, followed by developing technologies for co-hydrolysis of the holocellulose to soluble sugars, and co-fermentation of xylose and glucose to ethanol. The conversion to holocellulose to bioethanol shall prevent sugar loss, increase ethanol yield, and significantly reduce the process time.

3. Spatiotemporal Pattern Formation in Biochemical Systems

Our group has experimentally demonstrated the emergence of spatiotemporal patterns in catalytic as well as in enzymatic hydrolysis of lignocelluloses. These are the first experimental evidences of pattern formation in bioenergy systems, which emerge from auto-regulatory mechanisms (e.g., product-inhibition and auto-catalysis) that exist in enzymatic and catalytic hydrolyses. While these fascinating patterns are of immense academic interest, they also enhance product yields by 15-20% by promoting synergy between the molecular and the reactor scales. We plan to understand and quantify these patterned states through further experimentation coupled with multiscale modelling.

Dr. Saikat Chakraborty's Personal Statement

A few days after joining the University of Houston for my PhD – for which the Chair of Chemical Engineering at the Indian Institute of Science had recommended me to his alma mater – I noticed an old man taking the stairs at the Cullen College of Engineering, and walking into the Department of Chemical and Biomolecular Engineering. Why does he never take the elevator? I wondered, as I watched him walk up a couple of times in the next couple weeks, until I followed him into the faculty lounge one morning. On the door of the faculty-office he walked into was written a name forever handcuffed to history – **Prof. Neal Amundson**, the father of modern Chemical Engineering, after whom the Chemical Engineering department at the University of Minnesota is named. Little did I know then that later that year when I would join Prof. Vemuri Balakotaiah's group for my PhD, Prof. Neal Amundson would become my academic great-grandfather – my PhD adviser's adviser's adviser, allowing me to claim a little leaf on *The Amundson Tree*, the largest academic family tree in Chemical Engineering.

That moment of discovering my connections to a legacy came a full circle almost five years later from that day, when Prof. Neal Amundson and his illustrious student Prof. Doraiswami Ramkrishna at Purdue University – the legendary author-duo of 'Linear Operator Methods in Chemical Engineering' – were invited by the AIChE Journal to write a 50-year review to choose the best papers in Mathematics in Chemical Engineering over the last fifty years from 1953 to 2003. My heart skipped a beat when I opened – what Ramkrishna & Amundson (2003) called – '**A 50 year introspection**' to find the first paper of my PhD being listed and discussed in that historic review.

All full circles do not come with the same circumference – some are five years long, some are twenty. One began with endless hours of learning in my PhD adviser Prof. Vemuri Balakotaiah's office and in our lab, with him teaching me the **alphabets of Chemical Reaction Engineering** – from *Aris Number*, which he had discovered and named after his mentor Prof. Rutherford Aris, to *Zeldovich Number*, from the mathematical complexities of Bifurcation Theory to the conceptual intricacies of the interactions between transport and reactions, from how to live with a mathematical equation till it reveals its true self to projecting partial differential equations on to orthogonal function spaces using the classical bifurcation theory. This circle completes with me being invited to deliver the keynote lecture at the special session "In Honor of Vemuri Balakotaiah's 65th Birthday" in the AIChE Annual Meeting 2021 this November.

A leap of faith landed me from the Department of Chemical and Biomolecular Engineering at the University of Houston to the University of Texas Medical School at Houston, for a two-year post-doctoral fellowship in Pulmonary Physiology and Medicine, under the guidance of Prof. Akhil Bidani, who then headed the Division of Pulmonary and Sleep Medicine, but sadly passed away four years ago. What I learnt from Dr. Bidani – a PhD in Chemical Engineering from the University of Houston – about **human physiological systems** was no less priceless; he taught me how cells talk to each other through cell signaling, how each of our 37 trillion cells exercise its wisdom in deciding which ions and molecules to let in, how fast and how much, by regulating their transport across the cell membrane via ion channels, passive transporters, and ATP pumps; he taught me how cellular respiration syncs with pulmonary respiration, how the human pulmonary system is a multiscale system that embeds each length scale in a larger one, with the hierarchy of scales being connected through feedforward and feedback mechanisms, how physiological reactions are quite like chemical reactions, but a lot livelier because of the auto-regulatory mechanisms that connect the tiniest cells to the largest organs in the human body.



The next bend in the river appeared three years after I had joined the Indian Institute of Technology Kharagpur as an Assistant Professor, when Dr. Prabhakant Sinha, a Distinguished Alumnus of IIT Kharagpur, and the Founder of ZS Associates, donated \$2m for setting up a new Clean Energy Center at IIT Kharagpur, which was named the PK Sinha Center for Bioenergy and Renewables, and I was made its founding coordinator. The Bioenergy Center was set up with active support of the Energy Biosciences Institute (EBI) at the University of California Berkeley. The kindness and the mentoring I received from Prof. Chris Somerville, the then Director of EBI, is unforgettable. He invited me thrice to University of California Berkeley to mentor me on **Institution Building**; during two of these visits, I delivered invited lectures at EBI in UC Berkeley. Prof. Somerville arranged for me to meet with faculty members and administrators at UC Berkeley, and we were able to develop a Summer Exchange Program between IIT Kharagpur and UC Berkeley that allowed UC Berkeley students to intern in IIT Kharagpur labs, while our students interned at UC Berkeley. I coordinated this program from IIT Kharagpur side for seven years, during which I hosted several Chemical Engineering and Bioengineering undergraduate students from UC Berkeley in my Bioenergy Lab at IIT Kharagpur, while our undergraduate students interned at EBI. Prof. Somerville visited IIT Kharagpur twice to deliver keynote lectures at two international conferences on Bioenergy which I had organized at IIT Kharagpur in 2010 and 2013. I also co-taught and coordinated joint courses on Bioenergy at IIT Kharagpur with UC Berkeley faculty who visited us in 2011 and 2014. My interactions with Prof. Somerville and other EBI faculty have taught me how to approach the Clean Energy Challenge from a deeply analytical yet global, 360° perspective, and has trained me for the next phase of my research career, which included guiding four PhD students between 2014 and 2020, and four more who are on the verge of submitting their PhD dissertations – all in various areas of Bioenergy.

My next big responsibility came in the form being appointed IIT Kharagpur's Institute Coordinator for the DBT-Pan IIT Center for Bioenergy, and **leading a multi-departmental interdisciplinary project** on Algal Biofuels as its Principal Investigator. The 44.3 million INR project, which lasted from December 2014 to March 2021, was funded by the Department of Biotechnology, Government of India. These years also saw me taking active interest in translational research on Bioenergy, which led me to file for 5 patents on lignocellulosic (2nd generation) and algal (3rd generation) biofuels. Having guided 8 PhD students (4 of whom have received their doctoral degrees), authored about 50 publications in high-impact journals, filed 5 patents, taught several interdisciplinary courses on Bioengineering, Bioenergy, Physiological Transport and Reactions, Energy Systems Modelling, having worked as an Associate Professor at IIT Kharagpur for 7 years (2014-present), and having innovated the concept of Multiscale Bioenergy Engineering (on which I am writing a book, to be published by a Morgan & Claypool Publishers, USA), I now feel ready for another turn in my professional career.

It's a turn that will allow me to explore the epistemic roots of the workings of the planet and our lives, by allowing a seamless confluence of engineering and biology, of mathematics and kinetics, of physics and transport, of flow and form in the way Plato envisioned in Cratylus. I hope to leverage and enrich the platform that **Plaksha University** provides for holistic, borderless engineering education directed towards solving the grand challenges that we and our planet collectively face today. If the silos can be collectively broken, an ancient African saying will come true: **If you want to go far, go together.**

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Academic References for Faculty Application of Prof. Saikat Chakraborty, IIT Kharagpur

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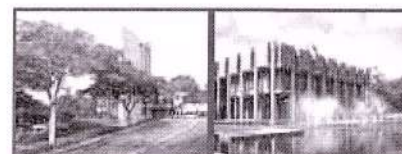
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Past Associations

- Professor, Department of Electrical Engineering, Indian Institute of Technology, Kanpur, India (1991-2003)
- Assistant Professor, Department of Electrical Engineering, Indian Institute of Technology, Kanpur, India (1982-1991)
- Member, Technical Staff, Corporate R & D, General Electric Co. Schenectady, NY, USA
- Visiting Faculty, University of Adelaide, Adelaide, SA, Australia
- Visiting Faculty, Queensland University of Technology, Brisbane, Australia
- Visiting Faculty, University of Pretoria, Pretoria, South Africa
- Visiting Faculty, Royal Melbourne Institute of Technology, Melbourne, Australia
- Senior Fellow, Nanyang Technological University, Singapore
- Associate Professor, School of EEE, NTU, Singapore
- Dean, Alumni Affairs & External Relations, IIT Guwahati (Sept 2011 - March 2014)
- Guest Professor, Soochow University (*since January 2015*)



Areas of Interest

- Modeling, Simulation and Analysis of Communication Networks
- Performance of WDM Systems



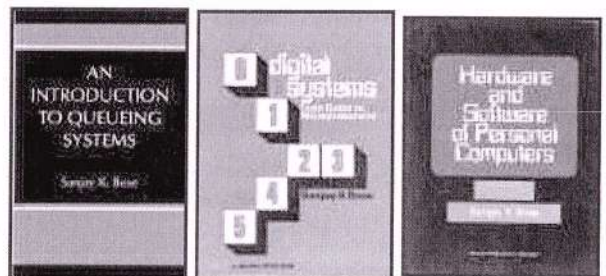
- ATM Networks
- Queuing Networks [QNAT Software](#)
- Network Applications
- Multiple Access Schemes
- Mobile Satellite Systems
- Communication & Queuing Related Software Development

Ph.D. Theses Guided

- [1] K.K. Islam, "Digital Protection of EHV/UHV Transmission Line"
 [2] B. Venkataramani, "Queueing Analysis of a Non-preemptive MMPP/D/1/K Priority System for Applications in ATM Networks"
 [3] M.V. Vinodkumar, "A Flow Model Based, Control Theoretic Approach to Dynamic Routing in Some Structured Communication Networks"
 [4] T.S. Rao, "Approximate Modeling of the Call-level Output Process of an ATM Switch"
 [5] Vivek Mudgil, "A Study of QoS based Management of Congestion using Backpressure Mechanism and Call Admission Control in ATM Networks"
 [6] Bin Chen, "Dynamic Traffic Grooming in IP/MPLS over WDM Networks"
 [7] Chee Wah Tan, "Advanced Routing Techniques for Wireless Ad-hoc Networks"
 [8] Samar Shailendra, "Multipath Transport and Flow Division in Multihome Hosts"
 [9] Ripudaman Singh, "Low Delay and Low Energy Contention Based Synchronous MAC Protocols for Event-Driven Wireless Sensor Networks"
 [10] Krishna Pavan Inala, "Impact of Communication Systems on Distributed Node Voltage and Vehicle to Grid Controller in a Smart Grid Scenario"
 [11] Prateek Rathore, "Network Coding Assisted Multicasting in Multi-Hop Wireless Networks"

Publications & Patents

- [Books](#)
- [Journal Papers](#)
- [Conference Papers](#)
- [Technical Reports](#)
- [Patents](#)
- [In a Lighter Vein.....if you can spare some time for light-hearted stuff!.....](#)



Society Memberships

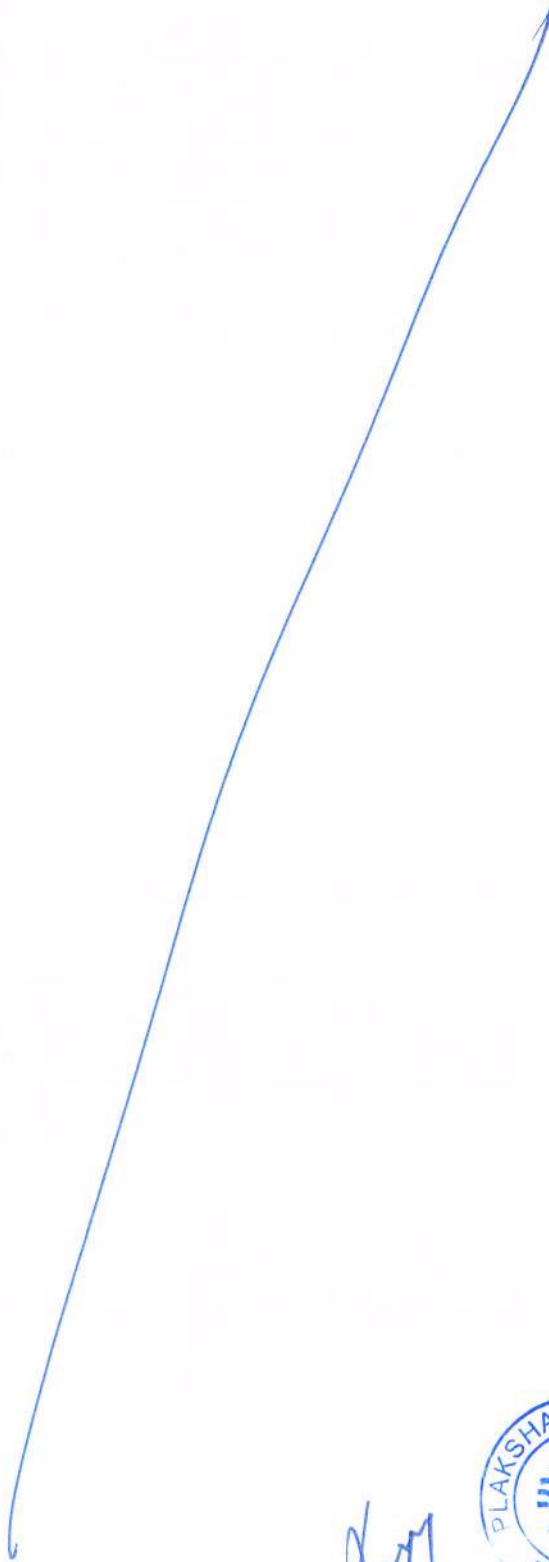
- Senior Member, IEEE (Chairperson, IEEE Uttar Pradesh Section, 1996, 1997)
- Member, Sigma Xi
- Member, Eta Kappa Nu
- Fellow, IETE (India)



If you want to see some pictures from my [Picture Gallery](#), click here. Hope you like them!

Here is the [KIAP report](#), in case you are interested





Saumya Jetley

PhD – AI/ML, University of Oxford | Scientific Researcher, Writer and Communicator | Coder
<https://github.com/saumya-jetley> | +33755398821 | saumya.jetley@gmail.com

Personal Statement Seeking roles in applied machine learning and computer vision teaching and research
Accomplishments

5 first-author publications in top-tier venues (NeurIPS, CVPR, ICLR, BMVC) and 1 US patent during PhD
Winner of IET Postgraduate research award'19 for excellence in applied AI
Winner of Oxford Business Innovation Challenge'17

Education

- PhD (2015-19), Computer Vision and Machine Learning, University of Oxford, supervised by Prof. Philip Torr, examined by Prof. Andrew Zisserman and Prof. Tinne Tuytelaars
- B.Eng.(2006-10), Electronics & Telecommunications (Minor: Digital Image Processing), University of Pune, India, *Magna cum laude*, Director's merit award holder, Winner of best industrial project award

Experience and Projects

Keywords: Causal reasoning, Machine learning, Safe AI, Computer Vision, Statistical Analysis

Coding experience: Matlab (+MatConvNet), Python (+PyTorch), C++ (+Caffe), Github, DSS (Dataiku)

2019 – present *Postdoctoral Research Scientist, TAU Team, INRIA-Paris Saclay, France*

Postdoctoral lead on French job market project to build causal tools to identify and visualise market biases, and ameliorate these by informing job and training recommenders through industrial partner QAPA | Lead researcher on APHP project for privacy-preserving predictive analysis of French COVID data

2019 (6 mon.) *Visiting Research Scientist, Five AI Limited (autonomous driving startup), U.K.*

Led project study on practical implications of deep neural network robustness on safety in self-driving systems

2015 – 2019 *PhD researcher, Torr Vision Group, University of Oxford, United Kingdom*

- Led all stages – conception, design, development and testing – of the following research projects:

[Deep Insight] Theoretical and practical tools to explain the functioning of classification neural networks and expose the inherent accuracy and robustness tradeoff, presented at NeurIPS'18, Matlab (MatConvnet)

[Trainable attention] Modules for attention based interpretability in deep convolutional models for classification, presented at ICLR'18, originally in Lua (Torch), reproduced in Python by userbase

[Straight to Shapes] Software for realtime instance segmentation in the wild, using C++ (Darknet) and Lua (Torch), presented at CVPR'17

[Visual saliency prediction] Algorithm ranks amongst top-15 on international benchmark, presented at CVPR'16, patented in the U.S, Winner of best internship presentation, available in Python (work done during 6 month research internship at Xerox Research Centre, France)

[Zero-shot recognition] Tested on traffic signs and brand logos, presented at BMVC'15, coded in Caffe (C++)

[Listen2See] Conceived and designed audio-guided navigation tool for partially sighted using realtime instance segmentation modules in association with OxSight

- Honorary mention for technical essay at International Computer Vision Summer School'15

2011 – 2014 *Research and Development Engineer, Centre for Development of Advanced Computing, Govt. of India (premier research lab famed for building India's first supercomputer)*

Co-developed, as a team of 5, Hindi language printed and handwritten text recognition tools for digitisation of national archives and for use in national survey kits respectively

Side project: As a team of 2, developed an android app for flag recognition in wild, custom-built the ML model

2010 – 2011 *Software Engineer, HSBC-Global Tech India*

Midframe (AS400) programmer for developing banking solutions

Fellowships and Grants

European research council grant (HELIOS) for doctoral research scholarship

Sir Richard Stapley academic scholarship for research studies at University of Oxford

St. Cross college travel and research grant for research presentation

ICLR and NeurIPS conference travel grants

Conferences and Talks

Spotlight presentation at international conference on Computer Vision and Pattern Recognition (2016)

Selected talk at 4th Edinburgh Deep Learning Workshop (2017)

Invited speaker at science meetup organised by Entrepreneurs First and Research/hers Code (2018)

Invited speaker at several labs - INRIA Paris, FiveAI, ISI Kolkata, IIT Kharagpur, Wadhvani AI (2019)



Select publications

- *With Friends Like These, Who Needs Adversaries?* Saumya Jetley*, Nicholas A. Lord*, Philip H.S. Torr, Proceedings of the 32nd conference on Neural Information Processing Systems (NeurIPS) 2018
- *Learn to pay attention*, Saumya Jetley, Nicholas A. Lord, Namhoon Lee, Philip H.S. Torr, Proceedings of the 6th International conference on learning representations (ICLR) 2018
- *Straight to Shapes: Real-time Detection of Encoded Shapes*, Saumya Jetley*, Michael Sapienza*, Stuart Golodetz, Philip H.S. Torr, Proceedings of the International conference on Computer Vision and Pattern Recognition (CVPR) 2017
- *End-to-End Saliency Mapping via Probability Distribution Prediction*, Saumya Jetley, Naila Murray, Eleonora Vig, Proceedings of the International conference on Computer Vision and Pattern Recognition (CVPR) 2016 [Spotlight]
- *Prototypical Priors: From Improving Classification to Zero-Shot Learning*, Saumya Jetley, Bernardino Romera-Paredes, Sadeep Jayasumana, Philip H.S. Torr, Proceedings of the British Machine Vision Conference (BMVC) 2015
- *3D Activity Recognition Using Motion History and Binary Shape Templates*, Saumya Jetley, Fabio Cuzzolin, Workshop proceedings of the Asian Conference on Computer Vision (ACCV) 2014
- *Two-Stage hybrid binarization around fringe map-based text line segmentation for document images*, Saumya Jetley, Swapnil Belhe, V.K. Koppula, Atul Negi, Proceedings of the 21st International Conference on Pattern Recognition (ICPR) 2012

Positions Held

Member of Indian national consortiums for Optical and Handwritten Character Recognition (2012-14)
On the committee of Oxford Women in Computer Science Society (2017-19)
On the committee of Oxford University Scientific Society (2016-17)
Student outreach ambassador for Department of Engineering Science (2017-19)

Science communication

Tutored several undergraduate courses at Oxford University (e.g. signal processing, image processing)
Ran coding workshops using Spheros for school kids as part of InspireHer! series, Oxford CS Dept. (2 yrs)
Conducted several workshops and outreach events for Dept. of Engineering, Science, Oxford (2 yrs.)
Conducted learning events for Science Museum London as Royal Academy of Engineering volunteer (4 mon.)

Leadership and management

Co-organised Oxbridge Women in Computer Science Conference 2019
Co-organised Frontiers of Computer Vision workshop at Machine Learning Indaba 2019
Review committee member at international conferences (ICLR'21, NeurIPS'20) and workshops (WiML'18)
Organised events as Industrial Coordinator for Oxford Women in Computer Science Society (OxWoCS)
Co-supervised several bachelors and masters degree projects, and one PhD project (ongoing)

Interests I enjoy reading; I write and share poetry on my Youtube Channel; Boardgamer; Slackliner

Languages Hindi (native); English (fluent); Punjabi (spoken); French (beginner)



Shashank Tamaskar

1239 Evans Ct, Davis, CA, 95618 • (765) 430-4945 • tamaskar@gmail.com

EDUCATION

- Purdue University**, West Lafayette, IN *(Aug'14)*
Ph.D. Aeronautics and Astronautics
Major: Aerospace Systems
Minor: Dynamics & Controls
GPA: 3.88/4.00
- Purdue University**, West Lafayette, IN *(Aug'11)*
M.S. Aeronautics and Astronautics
Major: Aerospace Systems
Minor: Dynamics & Controls
GPA: 3.86/4.00
- Indian Institute of Technology**, Bombay, India *(Aug'09)*
B.Tech. Aerospace Engineering
GPA: 8.06/10.00

ACHIEVEMENTS

- In my current role as Project Manager/R&D Research Scientist at Siemens Corporate Technology, I successfully acquired government research projects worth USD 5,000,000 in 2020, in the areas of Robotics, Automation & Advanced Manufacturing.
- Serving in the proposal review committee of the Advanced Robotics in Manufacturing (ARM) agency. Responsible for reviewing proposals and providing recommendations to the ARM leadership.
- Co-Founder & Controls lead for IIT Bombay's first student satellite, launched by Indian Space Research Organization, India on 09/26/2016
- Won merit certificates and awards for consistent exceptional performance at Cummins Inc (2015, 2016)
- Boeing Performance Excellence Award- Gold Level for outstanding work in DARPA META program (2011)
- 1st prize in AGI University Grant Competition: A competition with entries from ten countries (2010)
- 1st prize in Apps'N'Autos, A competition organized by Delphi Corporation and Purdue University for innovative app ideas related to automotive application (2011)
- Technical Citation Award, in recognition of outstanding technical activities at IIT Bombay (2009)

PUBLICATIONS

Journal

- N. Davendralingam, C. Guariniello, **S. Tamaskar**, D. DeLaurentis, and M. Kerman, "Modularity research to guide MOSA implementation," The Journal of Defense Modeling and Simulation, 2018.
- **S. Tamaskar**, K. Neema, and D. DeLaurentis, "Framework for measuring complexity of aerospace systems," Research in Engineering Design, vol. 25, no. 2, pp. 125-137, 2014.
- S. S. Mulay et al., "Attitude Determination and Control of Pratham, Indian Institute of Technology Bombay's First Student Satellite," Advances in the Astronautical Sciences, vol. 145, pp. 1509-1528, 2012.



Conferences

- **S. Tamaskar**, N. Davendralingam, J. Panchal, D. DeLaurentis, "Investigating the Impact of Organization on the Design of Complex Systems: A Framework based on the Dynamics of Information Flow", (presented in CESUN 2018)
- C. Guariniello, **S. Tamaskar**, N. Davendralingam, D. DeLaurentis, "System-of-Systems tools and techniques for the analysis of Cyber-Physical System", (presented in CESUN 2018)
- N. Davendralingam, A. Raz, **S. Tamaskar**, C. Guariniello, K. Moolchandani, D. DeLaurentis, "A DAbI Process for System-of-Systems Engineering—antecedents, status quo and path forward", (presented in CESUN 2018)
- H. Chao, A. Maheshwari, V. Sudarsanan, **S. Tamaskar**, D. DeLaurentis, "Block-chain based UAV Traffic Information Exchange Network", (published in AIAA Aviation 2018 conference)
- K. Neema, **S. Tamaskar**, D. DeLaurentis, "Complexity and Flexibility enabled Model Based Design Framework for Space System Design", (published in AIAA Space 2018 conference)
- K. Neema, **S. Tamaskar**, and D. DeLaurentis, "Consensus Based Operating Picture for Distributed Battlefield Management," in AIAA Infotech@ Aerospace, 2016, p. 0918.
- L. M. Bowers, L. Mockus, **S. Tamaskar**, and D. DeLaurentis, "Investigation of Connectivity: Definition, Application, and Formulation," presented at the 15th AIAA Aviation Technology, Integration, and Operations Conference, Dallas, Texas, USA, 2015.
- S. Bandhyopadhyay et al., "Introduction to Pratham, IIT Bombay's Student Satellite Project," 2010: Indian Small Satellite Systems Conference, Bangalore, India.
- K. Neema, **S. Tamaskar**, and D. DeLaurentis, "Innovative Framework for Orbital Debris Mitigation through Satellite Rejuvenation," in AIAA SPACE 2012 Conference & Exposition, Pasadena, CA.
- **S. Tamaskar**, K. Neema, and D. Daniel, "Complexity Analysis of Spacecraft Architectures," AIAA SPACE 2011 Conference & Exposition, Longbeach, CA.
- **S. Tamaskar**, K. Neema, T. Kotegawa, and D. DeLaurentis, "Complexity enabled design space exploration," pp. 1250-1255: IEEE Systems Man and Cybernetics Conference.
- V. Vinay, **S. Tamaskar**, R. Chow, D. A. DeLaurentis, and F. Wieland, "Modeling and Simulation of UAS in the NAS: Challenges in Generating Consistent Performance Data for Heterogeneous Set of UAS," p. 5424.
- K. Neema, **S. Tamaskar**, and D. DeLaurentis. "Measuring complexity of Aerospace Systems", 8th International Conference on Complex Systems, Quincy, Massachusetts, 26 June - 1 July 2011.
- **S. Tamaskar**, D. DeLaurentis, "Modular Spacecraft Architecture, a New Paradigm in Spacecraft Design," 61st International Astronautical Congress, Prague, Czech Republic, 27 Sep - 1 Oct 2010, IAC-10-D1.4.9.

PATENTS

- US10746123B2, Deep reinforcement learning for air handling and fuel system referencing.
- US20200149491A1, Techniques for transient estimation and compensation of control parameters for dedicated EGR engines.
- US20200063676A1, Deep reinforcement learning for air handling control.
- US20190078522A1, Dedicated exhaust gas recirculating (EGR) system.
- W02019125442A1, Techniques for improving fuel economy in dedicated EGR engines.
- PCT/US2019/062757, Automatic Sensor Based Construction of Complex Scenes for Industrial Autonomy
- PCT/US2020/017702, Methodology to Impose Safety Requirements in Engineering Autonomous Machines.



- PCT/US2020/025719, Methodology to Leverage a Cloud Digital Twin for Robust Artificial Intelligence Inference in Edge Devices.
- PCT/US2020/028694, Distributed Neural Network Boosting in Siemens Simatic TM NPU
- 2019E21101US, Methodology for Encoding and Executing Large Scale Matrix Operations on AI Hardware Accelerators
- 2020E09173US, Robotic Folding of Stiffened Fabric

SELECTED TALKS

- Invited speaker for TECHLAV Seminar Series, organized by North Carolina A&T and University of Texas at San Antonio. Presented on “Sensor Fusion and Sensor Target Allocation for multi-agent systems”, 2017
- Invited speaker at IIT Raipur. Presented on “Advanced Robotics in Manufacturing”, 2019
- Invited speaker at Pt. Ravishankar Shukla University, Raipur on “Research opportunities in Robotics and Manufacturing”, 2019.

ENTREPRENEURSHIP

- Selected for NSF ICORP Entrepreneurship program for Customer Discovery. Interviewed 40 faculty from three different US institutes to identify the key challenges facing them in improving the quality of teaching in their courses.
- Developed outline for TEACHBOX-an online tool for offering engineering education best practices to the faculty.

PROFESSIONAL EXPERIENCE

Project Manager/ R&D Research Scientist

Advanced Manufacturing Automation, Siemens Corporation

(July'18- Present)

- Working as a project manager & R&D Research Scientist managing 6 R&D research projects related to adoption of robotics and machine learning for manufacturing. **Research projects mentioned below.**
- Managing project team comprising of Siemens employees and employees of other companies, universities for successful project execution.
- Developing control algorithms in collaboration with project team for robot control and path planning.
- Project manager and representative for Siemens within Open Process Automation Forum, a standard development activity for developing interoperable distributed automation equipment
- Grant Writing and University/Industry Collaboration. Successfully collaborated with professors, and industry professionals to bring projects over \$5,000,000.

Associate Research Scientist

School of Aeronautics and Astronautics, Purdue University

(Sept'17- July'18)

- Leading algorithm development effort for route selection in the **ARPA-E NEXTCAR** program coordinating efforts between partners based at **Purdue, Cummins Inc., NREL and Peloton Technology**
- **Supervising** and mentoring graduate students with analysis and simulation activities for **NASA Systems-wide Safety and Assurance Technologies** project, and for **NASA Mars Technology Assessment and Planning project**
- Leading **grant writing** activities for numerous agencies such as **National Science Foundation, Air Force Research Lab, Office of Naval Research, NASA** etc.



Technical Specialist, Controls and Diagnostics

Advanced Dynamic Systems & Controls, Cummins Inc.

(Sept'16- Aug'17)

- **Led the controls integration efforts** for performance and robustness improvements of the prototype vehicle and successfully demonstrated the vehicle performance at several customer demonstrations
- Submitted **eight patent ideas**, related to drivability and emission performance improvements, for review by the Cummins Invention Review Committee, five filed so far with patent office
- **Initiated a process for requirements capture** so that lessons learnt during field testing get translated into appropriate system, and subsystem level requirements and are thus addressed during next round of model development
- **Developed a 'grey-box' approach for modeling air, fuel and EGR** during transient engine operation to support better emission, knock control and superior drivability in a single framework

Senior Engineer, Controls & Diagnostics

Advanced Engine Controls, Cummins Inc.

(Aug'14- Aug'16)

- **Designed control algorithms** related to air handling and air-fuel ratio control for a prototype engine
- **Integrated these algorithms with other subsystems** and implemented them on a prototype vehicle
- The prototype vehicle demonstrated **superior acceleration and reduced emissions** with respect to state of the art technologies

Advanced Engine Controls Intern

Advanced Engine Controls, Cummins Inc.

(May'12- Aug'12)

- Conducted experiments for **system identification** and developed a **black-box and grey-box model of the throttle**
- **Designed a controller** for intake air throttle, a highly nonlinear system with static friction and deadzone nonlinearities
- **Satisfied challenging performance requirements** ($\tau < 40\text{ms}$, 0.5% settling time $< 100\text{ms}$) for 99.7 % observations (3σ)

RESEARCH PROJECTS: Robotics & AI

Built-By-Bot: Customized COVID Mask Assembly using Robots

Sponsor: Advanced Robotics in Manufacturing, DoD Institute

(Sept'20- Aug'21)

- Leading the research team to develop robotic technology for developing customized face mask using robots.
- The technology is currently being prepared for demonstration at Bluewater Defense and has support from other apparel manufacturers such as VF Corporation.

Rapid PPE Production through Automation & Robotics (RAPPAR)

Sponsor: Advanced Robotics in Manufacturing, DoD Institute

(Sept'20- Aug'21)

- Leading the research team to develop robotic technology for improving existing PPE assembly lines through improvements in automation and robotic technologies such as automated packaging and defect recognition.
- The technology is currently being prepared for demonstration at HOMTEX mask making plant and has support from other PPE manufacturers.



BOT Couture: Robotic Clothing Manufacturing

Sponsor: Advanced Robotics in Manufacturing, DoD Institute

(Sept'20- Aug'21)

- Phase 2 of the existing robotic garment assembly project. Objective is to advance the existing robotic technology to perform more complex sewing operations.
- The technology is currently being prepared for demonstration at Bluewater Defense, a company specialized in making uniforms for US military.

Rapid Robotic Diagnostic Kit Discovery (R2D2)

Sponsor: Advanced Robotics in Manufacturing, DoD Institute

(Sept'20- Aug'21)

- Developing robotic technology to accelerate development of Lateral Flow Assays (COVID tests) using robotics and automation.
- The technology is currently being prepared for demonstration at Maxim Biomedical, a company specialized in making COVID tests.

Autonomous Coating with Realtime Control and Inspection

Sponsor: Advanced Robotics in Manufacturing

(July'20- June'21)

- Leading the research team to develop robotic technology for autonomous coating and inspection of aircraft fuselage and other large structures.
- The technology is currently being prepared for demonstration at Boeing Technology Center in South Carolina.

Path Planning for Precision Brazing

Sponsor: Advanced Robotics in Manufacturing

(January'20- March'21)

- Leading the research team to develop robotic technology for precision brazing of PDC cutters for drill bits used in Oil & Natural gas applications.
- The technology is currently being prepared for demonstration at Schlumberger for a usecase involving human-robot collaboration to perform precision robotic brazing.

Multi-Robot, Multi-Machine Interoperability

Sponsor: Advanced Robotics in Manufacturing

(August'19- March'21)

- Leading the research team to develop technology seamless interoperability between robotic systems and automation equipment (such as conveyor belts, PLCs, CNC machines)
- The technology is currently being prepared for demonstration at Schlumberger for a usecase involving tool inspection from a CNC machine.

Robotic Assembly of Garments

Sponsor: Advanced Robotics in Manufacturing

(June'19- September'20)

- Leading the research team to develop robotic technology for robotic assembly of garments. The project involves stiffening fabric sheets using a polymer and manipulating the fabric sheets to manufacture a garment.
- The technology is currently being prepared for demonstration at Bluewater Defense in Puerto Rico for a usecase involving stitching pockets on pants for military uniform. The project has significant interest from Department of Commerce for its potential in reshoring garment manufacturing jobs to the USA.



Mixed Multi-angle Robotic IR Camera Control of Thermomechanical Surface Processes

Sponsor: Advanced Robotics in Manufacturing

(October'18- December'19)

- Led the research team to develop robotic active monitoring system for monitoring thermomechanical processes using a combination of IR camera mounted on a robotic arm and process digital twin.
- The technology was successfully demonstrated at Lockheed Martin, in Denver, CO.

RESEARCH PROJECTS: DYNAMICS AND CONTROL

Algorithm development in ARPA-E NEXTCAR Project

Guided by: Dr. Daniel DeLaurentis, Purdue University

(August'17- July'18)

- Using machine learning for analysis of real-world truck data to identify drive scenarios where fuel savings are possible
- Developing optimal control algorithms for optimization of vehicle and powertrain dynamics (using MPC) accounting for information available through V2V and V2I links such as grade, traffic etc.

Applying Machine Learning in Engine Control

Cummins Inc.

(March'17- Aug'17)

- Investigated techniques for applying machine learning techniques on various aspects of Engine/Vehicle control
- Submitted 5 invention disclosures on these topics. Currently being prepared for filing

Integration and Testing of Control Software in Test Cells and Prototype Vehicles

Cummins Inc.

(Aug'15- Aug'17)

- Led controls integration and testing effort for the prototype vehicle. Was responsible for developing test and validation plans, calibrating control software in the test cell and in the prototype vehicle
- Worked as control support of the test cell. Responsibilities included maintaining control software, working with rapid prototyping systems (Dspace), installation of sensor/actuators and resolving issues during testing of the engine

Development of Transient Compensators for Air-Fuel Dynamics

Cummins Inc.

(Aug'16- Aug'17)

- Used **system identification methods** for estimating the dynamics of **air and fuel flow** through the engine
- **Designed and validated compensators** and demonstrated significant improvement in emissions, drivability
- **Developed a physics-based approach for compensation** which replaced the need for using multiple compensators for different engine modes. Patent has been filed for this approach

Consensus Based Operating Picture for Distributed Battlefield Management

Guided by: Dr. Daniel DeLaurentis, Purdue University

(June'16- Aug'18)

- Supervising and leading research on **multi-agent controls** in the research group. Submitted publications and proposals in this area.
- Invited to give a talk on **distributed sensor fusion techniques** by North Carolina A&T State University in 2017



IIT Bombay Student Satellite Initiative: Development of Control System for the satellite

Guided by: Dr. K. Sudhakar, IIT Bombay (Oct '07- July'09)

- Modeling: **Modeled satellite attitude/orbital dynamics**, sensors and actuators and the environmental perturbations.
- Simulation: Developed 6-DOF simulations for **predicting satellite Trajectory/Orientation** in space in MATLAB.
- Hardware: Fabricated and tested magnetorquers (actuators) for the satellite.

Intelligence Surveillance and Reconnaissance System for California Wildfire Detection

Guided by: Dr. Daniel DeLaurentis, Purdue University (Jan'10- April'10), (Jan'11-April'11)

- Developed an optimal control algorithm using dynamic programming to guide the UAVs for **efficient fire detection**
- Compared the optimal algorithm with several state of the art algorithms, found **20% improvement in detection time**
- Developed an analysis tool MALAB and STK to simulate different operating scenarios and identified promising UAV design parameters. The project won **first prize in AGI University Grant Competition 2010**

Designing Autopilot for UAV

Guided by: Dr. Dominick Andrisani, Purdue University (Jan'10-April'10)

- Simulated **6-DOF UAV model in Simulink** and designed compensators to **achieve longitudinal and lateral stability**
- **Developed an autopilot** to enable the **UAV** to follow **waypoints in steady wind conditions**

Mechatronics: Penalty Kick Robot

Guided by: Dr. James A Mynderse (Jan'12-April'12)

- **Designed a robot** which could play a game of penalty kick
- Innovative features of the robot were- solenoid based kicking mechanism, active tracking of opposing robot and ball

Orbit design for low energy transfer from low earth orbit (LEO) to lunar orbit (B.Tech thesis)

Guided by: Dr. K. Issac and Dr. K Sudhakar, IIT Bombay (Aug'08-April'09)

- Assessed design of optimal trajectories to enable significant fuel reduction in transfer from LEO to moon
- Investigated a novel technique, CRTBP, which is more versatile and fuel efficient than traditional approach to orbit design
- Developed a MATLAB® tool for generating optimal trajectories

RESEARCH PROJECTS: AEROSPACE SYSTEMS

Managing Complexity of Aerospace Systems (PhD Thesis) (Boeing Performance Excellence Award)

Guided by: Dr. Daniel DeLaurentis, Purdue University (Aug'09- Aug'14)

- Developed a framework for measuring complexity, found good correlation with development cost of space systems
- Developed an expert system based design space exploration methodology, which identified commonalities between designs to extract good and bad design features and uses them to accelerate the optimization process



- Developed approaches for visualization of multi-dimensional space formed by performance, complexity and other relevant system attributes to aid the decision making process
- Developed a toolbox for complexity enabled fractioned spacecraft design space exploration to allow trade-offs between performance, complexity and flexibility and identify promising designs

Measuring Air Connectivity Index (ACI) of the US Air Transportation Network

Guided by: Dr. Daniel DeLaurentis, Purdue University

(Sept'12- Aug'14)

- Performed statistical analysis of the passenger flow data and used maximum likelihood estimation to identify the parameters which correlate with connectivity of US airports
- Investigated the effectiveness of the ACI metric for US air transport network and analyzed its effectiveness using tools such as SAS, STATA

Modular Spacecraft Architecture for Earth observation

Guided by: Dr. Daniel DeLaurentis, Purdue University

(Jan'10- Aug'14)

- Assessed the advantages and disadvantages of modular spacecraft architecture over monolithic architecture with regard to Earth observation missions with cost, weight and complexity as performance metrics
- Developed models for evaluation of size, weight and power (SWaP) for different architectures by regression analysis of the available satellite data
- Developed a comprehensive system complexity metric to measure the complexity of different spacecraft architectures
- Developed a tool for rapid analysis of spacecraft architectures

System-of-Systems Approach for Assessing Technologies in the Next Gen Air Transportation System

Guided by: Dr. DeLaurentis, Dr. Crossley, Purdue University

(May'10- May'11)

- Developed models to simulate the impact of technological improvements on noise and emissions from 2005 to 2040
- Solved resource allocation (RA), a linear programming problem where a fleet of aircrafts are distributed across the air transportation network to maximize profit and satisfy passenger demand and other constraints.
- Developed RA code for different scenarios such as competition between low cost and legacy carriers, domestic and international routes etc.

Modeling and Simulation for Unmanned Aircraft Systems (UAS) in the National Airspace System

Guided by: Dr. Daniel DeLaurentis, Purdue University,

(Aug'11- Aug'14)

- Calculating performance characteristics of 12 UAS using design tools such as Flight Optimization System (FLOPS) based on data provided by project partners (AAI, General Atomics)
- Convert the data in appropriate formats BADA (Base of Aircraft Data), MACS format (Multi-Aircraft Control System)

Developing Next Gen Project Lifecycle Management Tools

Guided by: Dr. DeLaurentis, Purdue University

(Sept'13- Aug'14)

- Collaborated with PLM groups at Cummins, Rolls Royce, General Motors, Gulfstream to develop next generation of PLM tools incorporating factors such as complexity, flexibility and adaptability in the design process
- Validated the tool with data from industry to assess its impact on the development time & cost



LEADERSHIP EXPERIENCE

Siemens Corporate Technology

Project Manager

(Oct '07 – July'09)

- Leading a group of university/industry researchers from diverse organizations for execution of complex R&D robotics projects.
- Managing operations and finances for projects with budget of 5,000,000 dollars.

Pratham- India's first student satellite initiative, IIT Bombay, India

CO-FOUNDER & OVERALL COORDINATOR

(Oct '07 – July'09)

- Assembled an interdisciplinary team of 33 students and 15 professors across the institute
- Channelized team efforts to convince the Indian Space Agency personnel to sign an MOU for satellite launch
- Initiated an outreach program with aim of mentoring 10 Indian universities in satellite technology
- Managed operations, logistics, and finances of the project with a budget of 200,000 dollars

Science Club, IIT Bombay, India

OVERALL COORDINATOR

(Mar'07-Mar'08)

- Managed 5 institute technical clubs and organized technical activities within the institute
- Designed and conducted Astronomy and Aero modeling workshops with 250+ audience
- Led an aggressive publicity campaign leading to a rise in footfall from 10-20 in the previous year to 50-100 in events

SOFTWARE SKILLS

C++, Matlab, Simulink, Python, Statistical packages (STATA, SAS, R), Eclipse, JavaScript, Java, CPLEX/GAMS

SELECTED COURSE PROJECTS

Parametric estimation of spacecraft performance using Neural networks

(Aug'10- Dec'10) -

Collected data from 50 satellites about system design drivers and technical performance measures

- Analyzed the data using a 3 layered artificial neural network (ANN) with backpropagation
- Compared the results with the results obtained from linear regression

Design of a fractionated satellite architecture for an Earth observation mission

Guided by: Dr. DeLaurentis & Dr. Crossley, Purdue University

(Aug'09- Dec'09)

- Developed a MATLAB® tool for sizing and performance evaluation of different satellite architectures
- Evaluated and compared fractionated and monolithic satellite architectures using weight, power and redundancy as metrics

Sliding mode control of formation flying satellites

Guided by: Dr. Martin Corless, Purdue University

(Jan'13-April'13)

- Designed a sliding mode controller for maintaining tetrahedral satellite formation using an artificial potential field
- Minimized chattering by selecting appropriate switching function; Investigated strategies to reduce energy consumption



A handwritten signature in blue ink, appearing to be "Nigam", written next to the university logo.

Multi-Objective Combinatorial Optimization

(Aug'12-Dec'12)

- Solved the bi-objective assignment problem for identifying the best sensor assignment for target tracking using Two Phase method.
- Studied auction algorithms for solving assignment problem in distributed fashion.

RELEVANT COURSEWORK

Aerospace Systems:

- Multidisciplinary Design Optimization (MDO)
- Design Theory and Methods for Aerospace Systems
- Aircraft Design
- Optimization in Design
- Systems Safety and Reliability
- System of Systems (SoS) modeling and analysis

Mathematics

- Probability, Statistics
- Applied Regression Analysis
- Numerical Methods for Engineers
- Introduction to Linear Algebra and Calculus (3 courses)
- Complex Analysis and Partial Differential Equation

Dynamics and Controls:

- Guidance and Controls of Aerospace Vehicles
- System Modeling, Dynamics and Control
- State Space Methods for Flight Vehicles
- Flight Mechanics
- Spaceflight Mechanics
- Nonlinear Dynamics and Chaos



December 23, 2021.

Chair of the Selection Committee,
Plaksha University,
Sector 101, IT City Road, SAS Nagar,
Punjab 140306.

Dear Members of the Selection Committee,

I am writing to apply for the faculty position at the Plaksha University, in response to the advertisement posted on the University website. I have obtained my Ph.D. from Indian Institute of Science, Bangalore, India, in 2016, specializing in Fluid Mechanics and Heat Transfer. I am trained in both experimental and computational methods at the PhD and masters level respectively. I have about three years of Industrial and seven years of teaching experience. I am very much interested in being part of the Plaksha University, where I can contribute to the engineering education, continue individual as well as collaborative research, and lead campus and professional service activities. I feel with the kind of training I have received as a researcher, and my past experience in the industry and academia, I can do justice to this position.

I would be happy to discuss this position with you in further detail. I am enclosing my curriculum vitae and statements of teaching and research interests etc. herewith. Please let me know if you require any additional materials or information. Thank you very much for your consideration, and I look forward to hearing from you soon.

Sincerely,

Shashikant S. Pawar.



SHASHIKANT S. PAWAR

Department of Mechanical Engineering,
Don Bosco Institute of Technology, Mumbai, India -400070.
Contact no.:+91 9108311319 (Cell)
pawarss@gmail.com

EDUCATION

Ph.D., Mechanical Engineering, Indian Institute of Science, Bangalore, Karnataka, India – 560012. 2008 – 2015

- Thesis: Axially Homogeneous Turbulent Convection at High Rayleigh Numbers: Scaling Laws for Flux and Spectra.
- Area of Study: Fluid Mechanics and Heat Transfer.
- Advisor: Professor Jaywant H. Arakeri

Master of Technology, Mechanical Engineering, National Institute of Technology, Hamirpur, H.P., India – 177005. 2006 – 2008

- Thesis: Effect of Flow Direction on the Instability of Mixed Convection Flow past a Circular Cylinder.
- Area of Study: Computational Fluid Dynamics and Heat Transfer.
- Advisors: Professor Anoop Kumar and Professor T. K. Sengupta (IITK)

Bachelor of Engineering, Mechanical Engineering, V.J.T.I.[†], Matunga, Mumbai, (affiliated to University of Mumbai), India – 400019. 1997 – 2000

[†] Formerly Victoria Jubilee Technical Institute.

Diploma in Engineering, Mechanical Engineering, Government Polytechnic, Thane, Maharashtra, India – 400612. 1994 – 1997
(Board of Technical Education, Maharashtra state)

SPECIALIZATION & RESEARCH INTERESTS

Fluid dynamics and Heat Transfer (Fluid turbulence, Convective heat transfer, light propagation in turbulent media, Biomimetics, Engineering education)

EXPERIENCE

Head, Department of Mechanical Engineering, Don Bosco Institute of Technology, Mumbai, India – 400070. 2021– till date

Work performed: Implementation of initiatives taken by the Institute such as Project based learning, Research and Innovation, mentoring faculty members for research, framing departmental objectives, member of various committees.

Assistant Professor, Department of Mechanical Engineering, Don Bosco Institute of Technology, Mumbai, India – 400070. 2018– till date

Work performed: Teaching, mentoring and assessing undergraduate mechanical engineering students, conducting laboratory courses, examinations, guiding senior students in their major project work etc.



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Postdoctoral Research Associate, Department of Mechanical Engineering, 2015 – 2018
Indian Institute of Science, Bangalore, India – 560012.

Work performed: Experimental investigations in the buoyancy driven turbulence which included Design and building of the experimental setup, Planning the experiments, Measurements, Analysis of data, Interpretation of results and communication of the work.

Lecturer, Department of Mechanical Engineering, 2004 – 2006
Fr. C. Rodrigues Institute of Technology, Navi Mumbai, India – 400703.

Work performed: Teaching and assessing undergraduate mechanical engineering students, conducting laboratory courses, examinations, guiding senior students in their major project work etc.

Assistant Lecturer, Department of Mechanical Engineering, 2003 – 2004
Datta Meghe college of engineering, Navi Mumbai, India – 400708.

Work performed: Teaching and assessing undergraduate mechanical engineering students, conducting laboratory courses, examinations etc.

Executive Engineer, Heavy Engineering Division, Larsen & Toubro Ltd., Powai works, Mumbai, India – 400072. 2000 – 2003

Work performed: Design of heavy engineering equipments, coordinating among different departments viz. Stores, Machine Shop, Welding, QA/QC, Dispatch etc. to ensure smooth execution of the work order.

AWARDS & ACHIEVEMENTS

Recipient of two director's gold medals for securing first rank in the Mechanical Engineering Department and also in the Institute, NIT Hamirpur (H.P.) – 2008.

Second in the merit list of Diploma in Mechanical Engineering of Maharashtra State Board of Technical Education – 1997.

PROFESSIONAL TRAINING

M.Tech. thesis work carried out as a long term trainee at High Performance Computing Lab, Department of Aerospace Engineering, IIT Kanpur, India. 2007 – 2008

CONSULTANCY

Consultancy services offered to Germanischer Lloyd Industrial Services Pvt. Ltd., Navi Mumbai, India, and Bhabha Atomic Research Center, Mumbai, India, during 2004 – 06, while working in the Fr. C. Rodrigues Institute of Technology, Navi Mumbai, India.



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JOURNAL PUBLICATIONS

1. Shashikant S. Pawar and Jaywant H. Arakeri, *Kinetic energy and scalar spectra in high Rayleigh number axially homogeneous buoyancy driven turbulence*, Phys. Fluids, 28(6), 065103, 2016.
2. Shashikant S. Pawar and Jaywant H. Arakeri, *Intensity and angle of arrival spectra of laser light propagating through axially homogeneous buoyancy driven turbulence*, Appl. Opt., 55(22), 5945-5952, 2016.
3. Shashikant S. Pawar and Jaywant H. Arakeri, *Two regimes of flux scaling in axially homogeneous turbulent convection in vertical tube*, Phys. Rev. Fluid, 1, 042401(R), 2016.
4. T. K. Sengupta, K. Venkatsubbaiah, S. S. Pawar, *Nonlinear instability of mixed convection flow over a horizontal cylinder*, Acta Mech., 201, 197-210, 2008.
5. Shashikant S. Pawar and Jaywant H. Arakeri, *Velocity and scalar measurements in axially homogeneous buoyancy driven turbulence*, In preparation, intended for submission to Phys. Fluids.
6. S. S. Pawar and R. Rathod, *Heat transfer enhancement using surface geometry modification*, In preparation, intended for submission to IJHMT.

CONFERENCE PUBLICATIONS

1. S. S. Pawar, G. Dsouza, O. Dsouza and A. Furtado, *Floating solid waste collection system using free vortex flow*, 46th National Conference on Fluid Mechanics and Fluid Power, Coimbatore, Tamil Nadu, India, 09-11 December 2019.
2. S. S. Pawar and J. H. Arakeri, *Dominant flow structures in axially-homogeneous high Rayleigh number turbulent convection*, International Conference on Rayleigh-Bénard Turbulence, Enschede, The Netherlands, 14-18 May 2018.
3. S. S. Pawar and J. H. Arakeri, *Velocity measurements in high Rayleigh Number axially homogeneous turbulent convection*, 6th International and 43rd National Conference on Fluid Mechanics and Fluid Power, MNNITA, Allahabad, U.P., India, 15-17 December 2016.
4. S. S. Pawar and J. H. Arakeri, *Light propagation through axially homogeneous buoyancy driven turbulence*, 24th International Congress of Theoretical and Applied Mechanics, Montreal, Canada, 21-26 August 2016.
5. J. H. Arakeri and S. S. Pawar, *Search for the ultimate regime in turbulent free convection: Rayleigh-Bénard convection and axially homogeneous convection in a vertical tube*. The 14th Asia Congress of Fluid Mechanics, 15-19 October 2013, Hanoi & Halong, Vietnam.
6. S. S. Pawar and J. H. Arakeri, *High Rayleigh number convection in a long vertical tube*, 23rd International Congress of Theoretical and Applied Mechanics, Beijing, China, 19-24 August 2012.
7. J. H. Arakeri and S. S. Pawar, *The $Ra^{1/2}$ flux scaling in turbulent natural convection in a long vertical tube*, 7th Intl. Symp. on Stratified Flows, Rome, Italy, August 22 - 26, 2011.
8. J. H. Arakeri, M. R. Cholehari and S. S. Pawar, *Homogeneous purely buoyancy driven turbulent flow*, 63rd DFD Meeting of The American Physical Society, California, Nov 20-23, 2010.



The role of an effective teacher, I think is to convey the essentials of the subject matter in the palatable way so that the students understand, feel comfortable at and develop an interest to learn more about it. During my student days, some teachers attracted me more than the others. The reason was learning with them was more like fun than a mere struggle to understand the subject. Sometimes through direct interactions and sometimes by mere observation I learned many things from my teachers, which later helped me when I took undergraduate teaching as profession, in 2003. Clear and concise explanations, systematic board work, regular feedback from the students, quizzes to make sure active participation of the students, challenging assignments etc. were some of the things I tried to practice and excel at. The 'presence' of a teacher therefore has played an important role in shaping me. Subsequently, use of multimedia became increasingly popular and I started using video clips of demonstrations, simulations etc. in my lectures which not only made them interesting but also helped students in assimilating the concepts. I worked as a lecturer for about three years before I enrolled for higher studies. During my graduate training, I was a teaching assistant to my advisor for the courses he offered to undergraduate as well as graduate students. Teaching graduate students was a different experience for me, since they knew the basics of the subject and craved for something newer and more challenging.

Recent use of information technology in education have made several online learning resources available to the students, such as massive open online courses offered by the top Universities around the world. The present situation brought to us by COVID-19 has proved their efficacy. In the past almost two years, we have continued the content delivery in the online mode and used learning management system extensively and found that today, a student is not much dependent on the teacher merely for the information. The presence of a teacher, however, has its own value in the teaching-learning process. Certain things a teacher can do more effectively by his presence such as, getting real-time feedback and adapting to the students' needs, answering specific queries by suitable examples, assessing them during their interactions etc.

I consider every lecture session as an opportunity to learn something new and perfect myself. Presently I teach the subjects Fluid Mechanics in the even semesters and Heat Transfer, and Computational Fluid Dynamics in the odd semesters to the undergraduate students. Mini projects, typically involving fabrication of a setup and measurements of some parameters or simulations of fluid flow and heat transfer problems, are made part of the curriculum in an attempt to introduce some aspects of Project Based Learning. I can take the thermodynamics, biological fluid and heat transfer for the undergraduate students. I would also like to offer Measurement techniques, Thermal cooling of electronics, Biomimetics and Fluid turbulence as electives to the graduate and undergraduate students. I feel in a research-oriented University, both the teaching and research are important since a fraction of undergraduate students make their career in research. Keeping this in mind, I intend to use some important pieces of information from the research articles to kindle the interest of the students into research. I would like to retain the time-tested conventional teaching practices and blend them with the modern teaching aids.



I would like to engage myself in the fundamental as well as applied research in the area of Fluid Mechanics and Heat Transfer with two main objectives. The first objective is to understand the physics of the natural phenomena and formulation of its theoretical model or the governing law. Such explanatory models or laws are required in the design of engineering systems and are also considered the underpinnings in the advancement of technology. The Second objective is to provide the technological solutions to the industrial, environmental and physiological problems in an innovative and sustainable way.

My research plan of near future comprises of topics which are connected by a central theme of achieving the above-mentioned objectives. In the following I have given four topics. Some aspects of the first two topics I have explored through my research and have developed interest in the last two topics from the work of fellow graduate students who worked in these areas. There is a scope for collaborative research in all these topics due to their diversified nature.

1. Exploration into different regimes of the axially-homogeneous turbulent convective flow: This flow is relevant in the studies of atmospheric and oceanic flows, stellar convection, convection in the mantle of the earth etc. Unlike the prototypical study model, in this case the solid boundaries are replaced by large isothermal reservoirs. Although I have worked on this topic during my Ph.D., there are many aspects of this flow which are not fully explored, such as flow regimes over the range of Rayleigh numbers, which is of relevance to the geophysical flows. One can study the relative roles played by the diffusive and buoyant forces and the associated flux and Reynolds number scalings in these regimes. Another important question-whether and how in the presence of buoyancy the kinetic energy and scalar spectra are modified in convective turbulent flow, can also be answered by this study.

2. Light propagation through the convective turbulence: Twinkling of a star is a commonly observed phenomenon which is the result of optical waves getting modified as they propagate through the turbulent media. This type of study has variety of applications. It is useful in observational astronomy, free-space optical communication, hydro-acoustic communication in the sea etc., In meteorology, the fluxes of heat, momentum and humidity in the surface layer of the atmosphere are estimated based on the theoretical relations derived for homogeneous and isotropic turbulent flow, however we found that buoyancy introduces anisotropy in the buoyancy driven flows and the theoretical relations get modified. I have a plan for a study using air (*Prandtl number* - 0.6) and salt water (*Prandtl number* - 600) as working fluids, which would be relevant to the atmospheric and oceanic flows respectively.

3. Thermal comfort and ventilation studies of confined spaces: Indoor thermal comfort studies are employed for improving design of workplaces, museums, hospitals, educational buildings, shopping malls etc., to achieve the desired comfort conditions of the occupants. These improvements are reflected in the higher productivity and reduction of the building



energy consumption. Recently there has been increased interest in the ventilation studies due to the pandemic brought by the infectious disease COVID-19. These studies are important in the design of ventilation systems of hospitals, quarantine centers, public transport systems etc.

4. Biological fluid dynamics and biomimetics: Biological fluid dynamics is broadly divided into two areas, external fluid dynamics and internal or physiological fluid dynamics. Bio-inspired aerial-aquatic robot which can perform specific tasks while in air as well as under water, improvement of the design of prosthetic valves to provide a cost-effective solution affordable to the common man are few topics of my interest. By studying the nature's design, engineering systems can not only be efficiently designed but also can be made efficient in the performance. Biomimetics, that is seeking solution to the engineering problems in nature, is therefore another interesting area of study.



During my doctoral work at IISc, Bangalore, I worked in the Fluid Mechanics laboratory in the Department of Mechanical Engineering. My work involved experimental investigations in the buoyancy driven turbulence at high Rayleigh numbers, created in a large aspect ratio tube. This type of flow is not much studied, unlike the prototypical turbulent Rayleigh-Benard convection. We have reported some interesting and unique features of this flow and also studied its effect on the light propagation, for the first time. Study of this type of flow is quite useful in understanding the physics of variety of geophysical flows. The light propagation study is important in many applications such as, hydro-acoustic communication in the sea, satellite-earth optical communication, design of laser weapons etc. This is a kind of research area I believe, wherein many aspects can be explored through the individual as well as collaborative work. I am also interested in other interdisciplinary areas such as, biological fluid mechanics and heat transfer, biomimetics, indoor thermal comfort and ventilation studies of confined spaces, thermal cooling of electronics etc.

For my master's thesis, I worked in the High Performance Computing Laboratory of Professor T. K. Sengupta, at the Department of Aerospace Engineering, Indian Institute of Technology, Kanpur, India, for about a year. The work involved Direct Numerical Simulations of mixed convection flow using an in-house developed code. At this point of time I realized the importance of experimental work and its role in complementing the computational results. I feel the exposure to both the experimental and computational work has given me better understanding of their relative strengths and limitations, which I can certainly use in my future research work.

After my undergraduate studies, I have worked for about three years in the Heavy Engineering Division of Larsen & Toubro Ltd., Mumbai, India, and later as a faculty member in the Engineering Colleges affiliated to University of Mumbai, for about three years, where I was responsible mainly for instructing the undergraduate Mechanical Engineering students. The industrial experience gave me the feel for the subjects I taught later. I was also a teaching assistant to my advisor during my graduate training. Apart from teaching, I am also involved in mentoring the undergraduate students, which is considered to be an important process in their overall well-being and development at the Don Bosco Institute of Technology, Mumbai, India, where I am presently working.



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REFERENCES

Prof. Jaywant H. Arakeri

Professor, Department of Mechanical Engineering,
Indian Institute of Science, Bangalore, India-560012.
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Contact No. +91-080-22933228 (W), +91 7760581256 (Cell).

Prof. Anoop Kumar

Professor, Department of Mechanical Engineering,
National Institute of Technology, Hamirpur, H.P., India-177005.
Email: anoop@nith.ac.in
Contact No. +91-01972-254726 (W), +91 9418009467 (Cell).

Prof. Raghuraman N. Govardhan

Professor, Department of Mechanical Engineering,
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Application Forms

Marketing Details

How did you hear about Plaksha University?

Colleagues

Have you visited the Plaksha University website?

Yes

Which aspects of Plaksha appeal to you the most?

Opportunity to build an institution

Research Opportunitites

Inspiring Vision

Attractive Benefits

Which journal did you spot Plaksha University's advertisement in?

I spotted it mainly on websites naukri.com, collegedunia.com etc. and also in architect magazine



Vishal Garg
Professor & Head

Center for IT in Building Science (CBS)
International Institute of Information Technology (IIIT)
Gachibowli, Hyderabad, Telangana
India 500032

Work + 91 40 66531125
Mobile + 91 9949990900
E-mail vishal@iiit.ac.in

- Research Interests Building Energy Informatics, Smart Homes, Cool surfaces for Urban Heat Island mitigation
- Work Experience
Professor and Head, CBS, IIIT Hyderabad (2017 onwards)
Responsibilities: Teaching, research, consulting, supporting the formulation of national-level policies and standards and implementation of building energy codes in the country. In the leadership team of Smart City Centre – <http://smartcityresearch.iiit.ac.in> supported by MEITY (Government of India), Smart City Mission and Government of Telangana.
- Co-Founder*, Intellogreen Solutions Pvt. Ltd. (2021 onwards)
Product development and business strategy for the startup in building energy efficiency.
- Associate Professor and Head*, CBS, IIIT Hyderabad (2007 - 2017)
Responsibilities: Teaching, research, professional training for capacity building and consulting in energy simulation and green buildings certification.
- Assistant Professor and Founding Head*, CBS, IIIT Hyderabad (2000 - 2007)
Conceived and established the Center for IT in Building Science in the year 2000. With the focus on development and application of advance IT tools for building science, the center offers first of its kind interdisciplinary research program in India.
Responsibilities: Teaching, research, curriculum development, and coordination. Developed M.Tech. and MS by Research programs in ‘IT in Building Science’.
- Education
Ph.D., Center for Energy Studies, IIT Delhi, India (2000)
Thesis: Fuzzy Logic Control - Applications to Building Automation Systems
B.E., Civil Engineering, Faculty of Engineering, University of Jodhpur, India (1995)
- Awards & Fellowships
- Fellow, International Building Performance Simulation Association (IBPSA) – 2019
 - Dr Arthur H Rosenfeld Urban Cooling Achievement Award – 2018
 - Fellow, Indian Green Building Council (IGBC) – 2016
 - Life Fellow, Indian Society of Lighting Engineers (ISLE) – 2013
- Select Research Projects
- *Residential building energy demand reduction in India (RESIDE)*, PI, 2018-2022.
The Indo-UK project – RESIDE, in partnership with OBU UK, supports the improvement of living conditions for millions of Indian citizens through establishing the knowledge base to develop a residential code for high-quality, low-energy housing across all five climatic zones in India. Leading the following work packages: Large-scale monitoring campaign and field survey using low-cost data collection methods; Design, trial, evaluate and refine Smart Home Energy Management System for monitoring, disaggregating, communicating and managing electricity demand; Residential building energy code, compliance tool and implementation roadmap.
 - *Development and performance analysis of double pane semi-transparent solar photovoltaic window/facade system*, Co-PI, 2017-2020.
The objective of this project is to develop a new semi-transparent solar photovoltaic (STPV) and spectrally selective glass-based window/façade system. The novelty of this project is the development of a new window system to facilitate maximum power generation along with minimum energy consumption for visual and thermal comfort in a built environment. Leading the development of control algorithms for



external/internal blinds that optimize the performance of the proposed new system and at the same time utilize maximum daylighting and minimizing energy consumption of the internal task lighting.

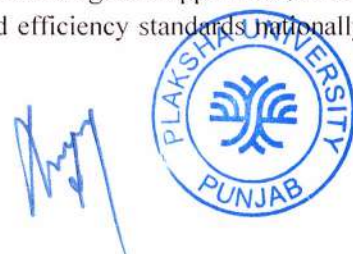
- *Center for Building Energy Research and Development (CBERD)*, Co-PI, 2012-2017. The overall objective of CBERD was to build a solid foundation for technologies research and development, knowledge, workforce development, and collaboration to position both the U.S. and India toward a future of clean energy economy and high-performance energy-efficient buildings. Lead the tasks related to Simulation and Modelling, Integrated Sensor and Controls, and Cool roof.
- *Controlled experiment for estimating the energy-saving potential and indoor thermal comfort improvement by use of high albedo surfaces on pitched concrete roof*, Co-PI, 2015-2017. The objective of this project was to develop a test platform to understand the effects of high albedo roofs and to test future materials and technologies developed by industry. Performance monitoring of cool roofs in test huts was undertaken in two different climatic zones of India. Using this ground data, a simulation model was created using the EnergyPlus energy simulation program which can then be used to update the cool roof calculator.
- “Cool Roofs for Rural Poor: Saving Energy, Beating the Heat Affordably” under World Bank Innovation Challenge Program, PI, 2014.
- *Earth System Cooling with Reflective Roofs: Experimental Verification and Model-based Evaluation for Selected Cities*, Co-PI, 2011-2012.

Policy support

- Supporting the development of a section on Smart Home for Eco Niwas Samhita 2021 Part-II (a national level energy conservation building code for residences) for Bureau of Energy Efficiency (BEE)
- Technical Assistance in development of ‘Making Telangana a Cool State - State-Wide Cool Roofs Program’
- Providing technical assistance in the development and implementation of ECBC at the national level and state level. AP and Telangana are the first states to implement ECBC in India.
- Supporting the development of standards on Smart Technology (IoT) in the field of Refrigeration and Air-conditioning for the Bureau of Indian Standards MED 03
- Supporting the development and implementation of Green Building Rating Systems (eg. Green Homes, Green Factories) by Indian Green Building Council

Consulting

- Consulting services for Energy Efficiency Refurbishment of a Building to showcase its benefits and demonstrate its viability in terms of Bhutanese context while developing capacity in terms of skills and knowledge. This project is funded by Department of Engineering Services, Ministry of Works and Human Settlement, Bhutan. 2021
- Technology assessment, pilot design and development of national policy roadmap to promote use of smart devices and automation technologies in residential buildings in India, 2019-2020. Consultant to Deloitte, funded by Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH.
- Support for implementation of Building Energy Efficiency and Environment Rating (BEEER) System and development of Cool Roof program in Bangladesh under the “Bangladesh Sustainable Energy Support Program”, 2020. Consultant to Deloitte, funded by the World Bank.
- Review and preparation of the roadmap for the Lebanon Thermal Building Standards. Consultant to PWC, funded by the World Bank.
- Support Natural Resources Defense Council (NRDC) Inc’s activities to reduce energy consumption and promote energy efficiency in India’s buildings and appliances, and to strengthen the ECBC implementation framework and efficiency standards nationally and in Indian states



- Review (jointly with Lucerne University of Applied Sciences and Arts - Hochschule Luzern Finanzen & Services) of the Indo-Swiss Building Energy Efficiency Project (BEEP) and BEEP RE for Swiss Agency for Development and Cooperation (SDC)
- Facilitation for green buildings (> 1 million m² built-up area). Prominent projects:
 - Office Building for Antrix Corporation Limited, ISRO, Bangalore
 - Factory Building for Vuppalaritha Magnetic Components Ltd., Hyderabad
 - High Rise Residential Towers for Aliens Developers Pvt. Ltd., Hyderabad
 - Residential Building (Avani Residence), the first platinum-rated Green Home in the country
 - Office Building for National Remote Sensing Centre, Shadnagar
 - IT Park Building for Infotech Enterprises, Hyderabad
 - High Rise Building (World Trade Center) for Brigade Group, Bangalore
 - Factory Building for Cummins Generator Technologies, Pune

Teaching & Mentoring

- *Academic Courses:* Intelligent Buildings, Energy Simulation, Building Automation and Controls, Lighting Design and Technology, Green Buildings
- *Short term courses:* Organized more than 50 short-term courses on Intelligent Buildings, IT for Energy Efficient Building Design, Energy Simulation for LEED and ECBC for practitioners, faculty members and graduates.
- *Online courses:* Introduction to Online Pedagogy, IoT and Smart Analytics, ECBC
- *Trained* (with two other trainers) over 100 ECBC Master Trainers in the country

Committees (member, present/previous)

Journal Editorial Board:

- Journal of Building Performance Simulation (JBPS) by Taylor & Francis
- Journal of Energy Informatics by SpringerOpen
- Building Services Engineering Research & Technology (International Advisory Board)

Journal Special Issue Guest Editor:

- 'Urban Heat Island Countermeasures', in the journal Urban Climate, edited by Hashem Akbari and Vishal Garg
- "Heat Island Countermeasure", in the journal of Energy and Buildings, edited by Hashem Akbari and Vishal Garg

Board member:

- Board of Advisors - Glass Academy, India
- Board member and founding president of the Indian Chapter of IBPSA

Core Committee member:

- ISHRAE India Building Energy Performance Standard (IIBEPS)
- IGBC Green Homes and Green Factory rating systems, IGBC Accredited Professional (AP) exam.

Panel Member:

- Panel introducing a new chapter "Part 11- Approach to Sustainability" in the National Building Code of India, by BIS.

Advisor

- Center for Clean Energy, Plaksha University
- Advisory member of ISHRAE RAMA standards development committee for:
 - Performance Rating and Testing of Chillers in India
 - Performance Rating and Testing of VRF system in India

Board of Studies:

- Department of Building Technologies & Services, JNAFAU, Hyderabad
- Department of Digital Technologies, JNAFAU, Hyderabad
- Building Technology and facilities, School of Planning and Architecture, YSR Architecture and Fine Arts University, Kadapa.

Committee member:

- Executive Committee member, Alliance for an Energy Efficient Economy (AEEE)
- Project Committee Voting Member in the Standing Standard Project Committee 90.2: Energy Efficient Design of Low-Rise Residential Buildings of ASHRAE
- Indian Indoor Environmental Quality Standard - 2016, developed by ISHRAE



- IGBC Green Products Certification Standard for Lighting System
- IBPSA conference committee

Scientific committee member:

- International Conference on Countermeasures to Urban Heat Islands (IC2UHI), 2014 (Venice), 2016 (Singapore)
- Asia conference of International Building Performance Simulation Association (ASim) 2016 (Korea), 2018 (Hong Kong)
- 9th International Conference on Indoor Air Quality Ventilation & Energy Conservation in Buildings (IAQVEC) 2016 (Korea)
- Roomvent & Ventilation Conference 2018 (Finland)

Technical committee member:

- IGBC Green Products Certification Standard for Lighting System
- 2nd National Conference of IBPSA-India 2012, (Jaipur) on Simulation of Buildings for Energy Efficiency and Better Built Environment
- ACM e-energy 2017 (Hong Kong), 2018 (Germany), 2019 (USA), 2020 (Australia), 2021 (Italy)
- INSPIRE (International Symposium to Promote Innovation and Research in Energy Efficiency) Nov 2017 (Jaipur)

Organizing committee member:

- 14th IBPSA International Building Simulation Conference - Building Simulation 2015 in Hyderabad (Conference Chair)
- 5th International Conference on Countermeasures to Urban Heat Islands (IC2UHI) 02 - 04 December 2019. (Organizing chair)

Task Force member:

- IMA HBI- ISHRAE COVID-19 Guidance Document for Air-conditioning and Ventilation in Healthcare Facilities
- ISHRAE COVID-19 Guidance Document for Air-conditioning and Ventilation

- | | |
|----------------|---|
| Professional | ● USGBC LEED AP |
| Accreditation/ | ● Member – ASHRAE, ISHRAE, ISLE, IBPSA |
| Membership | ● Third-Party Assessor (TPA) for ECBC-Telangana |

Patents Awarded/Applied

- *System and Apparatus for and Methods of Control of Localized Energy Use in a Building Using Price Set Points.* US Patent No.: US10496066B2, Date: 03-Dec-2019. Inventors: Vishal Garg, Niranjan Reddy, Sam Babu Godithi, Richard Brown, Christian Kohler, & Reshma Singh
- *Chiller Selection Optimization for Energy Efficiency.* Date of filing: Jan 12, 2016, Indian Application number: 201611001077, Inventors: Venkata Sai Nikhil, Vishal Garg, Jyotirmay Mathur, and Aviruch Bhatia
- *System and Method for Monitoring and Controlling Power Consumption in a Local Environment.* Date of filing: Aug 23, 2017, Indian Application number: 201744029921. Inventors: Vishal Garg, Niranjan Reddy, Sam Babu Godithi, Richard Brown, Christian Kohler, and Reshma Singh

Books

1. Garg Vishal, Jyotirmay Mathur, and Aviruch Bhatia. 2020. **Building Energy Simulation: A Workbook Using DesignBuilder**, Second Edition, CRC Press
2. Garg Vishal, Jyotirmay Mathur, Surekha Tetali, and Aviruch Bhatia. 2017. **Building Energy Simulation: A Workbook Using DesignBuilder**, First Edition, CRC Press.

Books with Weather Data Set

3. Garg Vishal, Jyotirmay Mathur, Vikram Murthy 2019, Sri Lanka Weather Data by ISHRAE
4. Garg Vishal, Jyotirmay Mathur, Vikram Murthy 2019, Nepal Weather Data by ISHRAE
5. Mathur Jyotirmay, Garg Vishal, and Murthy Vikram. 2017 and 2014. **Indian Weather Data** by ISHRAE

List of Publications: <https://scholar.google.co.in/citations?user=vyH26MIAAAA>



**University Grants Commission
Appendix - XIV**

Copy of some advertisements published for faculty recruitment.

I) University Website - <https://plaksha.edu.in/faculty>

Open positions

Role Specifications

Who we are looking for

Benefits

Plaksha University Punjab



How to apply

- How to apply
- How to apply
- How to apply

▶ How to apply

How to apply

Applicants should send their

- Cover Letter
- Job Market Paper
- Teaching Statement (if applying for teaching positions)
- Research Statement
- Appropriate CV/Resume (Please use the standard Academic Resume/CV format)
- Letters of Reference

II) American Economic Association - https://www.aeaweb.org/joe/listing.php?JOE_ID=111467656

Plaksha University, Punjab India

Professor / Associate Professor / Assistant Professor of Economics

JOE ID Number: 2021-02-111467656

Date Posted: 10/07/2021

Position Title/Short Description

Title: Professor / Associate Professor / Assistant Professor of Economics
Section: International: Full-Time Academic (Permanent, Tenure Track or Tenured)
Location: Mohali, Chandigarh, Punjab, INDIA
JEL Classifications:
C1 - Econometric and Statistical Methods and Methodology: General
C7 - Game Theory and Bargaining Theory
C8 - Data Collection and Data Estimation Methodology; Computer Programs
D - Microeconomics
G - Financial Economics
L - Industrial Organization
M - Business Administration and Business Economics; Marketing; Accounting; Personnel Economics
Keywords:

Microeconomics
Mathematical and Computational Economics
Econometric and Statistical, Methods and Methodology
Game theory and bargaining
Industrial Organization
India

Full Text of JOE Listing:

Plaksha University, India invites applications for tenure-track positions at the Assistant, Associate and Professor levels from candidates with a Ph.D. in economics and related fields. Plaksha University plans to form a strong group in economics focusing on (but not limiting to) mathematical and computational economics. We will also nurture interdisciplinary areas such as artificial intelligence, data science, and their intersection with economics, business, policy, and development.

Key faculty responsibilities include teaching and mentoring students at the Bachelors, Masters and Doctoral level, and helping to realize the mission of Plaksha through the establishment of research centers and laboratories of global eminence that have a far-reaching impact on economy and society.

We are committed to maintaining diversity and welcome applications from all nationalities. Plaksha is committed to supporting dual career couples and has dedicated staff to help with transitioning the faculty's family to living in Chandigarh, including help with schools, housing, connecting to the larger community etc.

Faculty members at Plaksha will receive several benefits, including but not limited to, competitive joining packages and salaries, attractive IPR and consultancy policies, mentorship opportunities from members of an eminent global Academic Advisory Board, and the opportunity to contribute to and create research labs and centers.

Application Requirements:

- Cover Letter
- Job Market Paper
- Letters of Reference
- Teaching Statement
- Research Statement



Faculty members at Plaksha will receive several benefits, including but not limited to, competitive joining packages and salaries, attractive IPR and consultancy policies, mentorship opportunities from members of an eminent global Academic Advisory Board, and the opportunity to contribute to and create research labs and centers.

Application Requirements:

- Cover Letter
- Job Market Paper
- Letters of Reference
- Teaching Statement
- Research Statement
- Statement of impact describing academic, entrepreneurial and industrial experience
- CV

Application deadline: 01/31/2022

Application Instructions:

For more information, please feel free to visit our website, www.plaksha.org or contact us via email at faculty@plaksha.org for any questions that you may have. To know more about the plans and prospects of the economics group at Plaksha, please contact Saptarshi Mukherjee at saptarshi.isi@gmail.com

<https://plaksha.org/faculty>



III) Association for Computing Machinery

| Job Board | Starts | Expires | Status |
|----------------------|------------|------------|----------------|
| ACM Faculty Position | 01/01/2022 | 01/31/2022 | Open to Report |

Job Posting

| | |
|--|---|
| Job ID: 5756372 | Job Function: Other |
| Position Title: Founding Faculty Position (Open Rank) | Entry Level: No |
| Profile Name: Plaksha University | Location(s): Chandigarh, Punjab, India |

Contact Person: _____ **Phone:** _____

Email Address: _____ **Fax:** _____

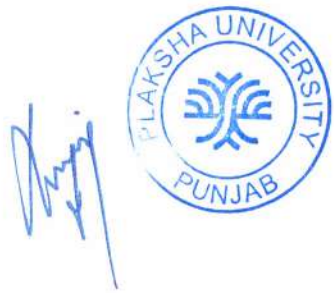
Apply URL: <http://plaksha.org/faculty>

Job Description

Plaksha invites applications for tenure track positions of the Assistant, Associate and Full Professor levels from candidates with a Ph.D. from a world-class institution and a strong record of accomplishment in computer science or related disciplines, selected and specialized in sub-disciplines, such as machine learning, artificial intelligence, data science, cyber physical systems, systems, IoT, autonomous vehicles, biological systems, robotics, digital health, mobility, spatial data, research, and a track record of making impactful research, innovation in teaching, industry practice or entrepreneurial ventures.

Key faculty responsibilities include teaching and mentoring students at the Bachelor's, Masters and Doctoral level; implementing project-based and experiential learning experiences; and helping to realize the mission of Plaksha through the establishment of research centers and laboratories of global eminence that have a deep and far-reaching impact on economic and society, in line with the vision of the university. We seek highly self-motivated faculty members with the following characteristics:

1. Faculty who are inspired, creative and passionate about what and how they teach, and fully enjoy teaching and mentoring students and are highly committed to student learning and success.
2. A willingness to embrace Plaksha's vision of reimagining education by adopting new pedagogical methods, including in teacher training, adaptive workflow, course formats, and the use of technology in teaching and learning.
3. A strong commitment and track record in one or more of the following:
 - Research framed by grand challenges of India and the world in the 21st century.
 - Research with impact on industry, public policy, practice, sustainable development etc.
 - Making inventions, commercializing technology/software or other entrepreneurial experience.
 - Experience in leading companies or other significant industrial/corporate experience.
 - Innovative pedagogy and/or scholarship in education and/or interdisciplinary education.
4. An interdisciplinary mindset in the broadest sense, recognizing the need for collaboration between social sciences, humanities and STEM disciplines and openness to learn from colleagues with different perspectives.



3. A passion for institution building with a desire for continuous improvement, self-motivation, initiative and a candid attitude.

4. A willingness to work in a team by accepting others' ideas, partnering, leadership, taking on needed to attain institutional objectives.

Faculty members at Plaksha will receive several benefits, including but not limited to: housing/boarding packages and salaries, health/education/retirement/PTF and other benefits package, mandatory opportunities for membership of an eminent global Academic Advisory Board and other members of the Plaksha family, collaboration and partnerships with industry and entrepreneurs, along with the opportunity to contribute and make research labs and centers.

We are committed to mentoring diversity and welcome applications from all nationalities. Plaksha is committed to supporting dual career couples and has dedicated staff to help with facilitating the faculty's family to move in Chandigarh including help with schools, housing, schooling in the larger community etc.

How to apply

Applicants should send their (1) Cover letter (2) CV (3) 1-2 leading statements expressing their views on interdisciplinary education, (4) Research statement, (5) A page on statement of impact describing their academic, entrepreneurial and industrial experience, and (6) a list of 10 references. There is no deadline for faculty jobs for applications, other applications will be accepted on a rolling basis starting June 1, 2023. The appointment dates are flexible and will start as early as Fall 2023. For more information and access to the application portal <https://www.plakshauniversity.com/careers>. You may also contact a member of faculty@plaksha.org for any questions that you may have.

About Plaksha

Plaksha University is a vision of the future being founded to reimagine technology, innovation and research by a global community of philanthropists, entrepreneurs and eminent academicians. Many of the professors and entrepreneurs involved in building Plaksha were previously involved in creating Ashoka University. The 50-acre campus of Plaksha is located in the foothills of the Himalayas, in the Chandigarh region, Punjab.

Plaksha will be a multidisciplinary University anchored around technology that seeks to create ethical problem solvers and leaders who will solve the toughest challenges of our planet. We seek to build a unique and thoughtful, intellectually vibrant, dynamic community of scholars, researchers, academicians and scientists from all over the world who are inspired to rethink learning and pedagogy while breaking new grounds in fields across engineering, sciences and business, and incorporating an entrepreneurial mindset to have deep and far-reaching impact on the economic and social.

Plaksha will be a multidisciplinary University anchored around technology. Our vision is to create ethical problem solvers and leaders who will solve the toughest challenges of our planet. We seek to build a unique and thoughtful, intellectually vibrant, dynamic community of scholars, researchers, academicians and scientists from all over the world who are inspired to rethink learning and pedagogy while breaking new grounds in fields across engineering, sciences and business, and incorporating an entrepreneurial mindset to have deep and far-reaching impact on the economy and society.

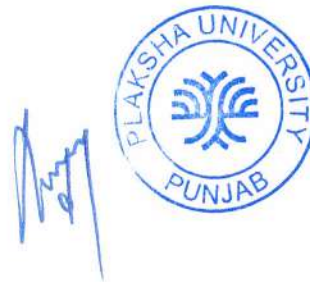
Plaksha's vision is being guided by a highly engaged Academic Advisory Board of global eminence. We have formed academic partnerships with the University of California, Berkeley, Purdue University and MIT International Center for Advanced Computer Research Institute.

Plaksha will have undergraduate, Masters, Ph.D and executive learning programs, and 5-7 exclusive research centers anchored around Grand Challenges. It will also anchor a vibrant ecosystem of startups with deep linkages to industry and academia. A unique on-campus postgraduate program, *Plaksha University Fellowship*, was already launched in 2019 to significant success. The undergraduate programs will commence in Fall 2023 with four undergraduate interdisciplinary majors, i.e., Computer Science and Artificial Intelligence, Robotics and Cyber-Physical Systems, Biological Systems Engineering, and Data Science, Business and Economics.

Campus Location

Chandigarh is designed and planned by the famous French architect Le Corbusier and is among India's most modern cities. Plaksha's 50-acre campus is within 10 minutes of the Chandigarh International Airport which has an expanding portfolio of direct international flights, 2-hour drive from several of India's most important rail stations, and a 2-hour drive from New Delhi. It is also in close proximity to other top research institutions such as Indian School of Business (ISB), Indian Institute of Science Education and Research (IISER), IIT Roorkee, Post Graduate Institute of Medical Education and Research (PGIMER) and an upcoming innovation corridor.

The Plaksha campus is being built with state-of-the-art facilities to be a world for interdisciplinary, experiential learning, research and entrepreneurship.



**University Grants Commission
Appendix - XV**

Information about the Library

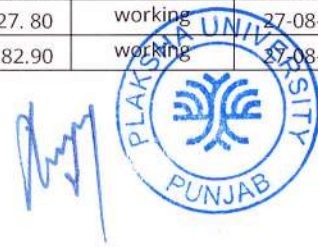
| S.No. | Total Space(all kinds) | Computer/Communication facilities | Total No. of Ref. Books (Each Department) | | All Research Journals subscribed on a regular basis |
|-------|--------------------------------|---|---|---------------|---|
| | | | Discipline | Num. of books | |
| 1 | Ground Floor - 899.691 SQM | 5 Computers - For Digital Library Section | Computer Science | 352 | ACM DL - 13 Journals |
| | | | Electrical | 180 | |
| 2 | Mezzanine Floor - 159.952 | 1 Computer - For Circulation Counter | Mechanical | 113 | IEEE Publisher - 206 Journals |
| | | | Mathematics | 168 | |
| 3 | Seating capacity - 252 persons | 1 Photostat & Scanning Machine | Robotics | 50 | Total - 219 Journals |
| | | | Physics | 181 | |
| 4 | Total Area - 1059.643 SQM | 24x7 WI-FI Facility at Library | Biology | 106 | |
| | | | Science | 66 | |
| | | | Statistics | 106 | |
| | | | Management | 162 | |
| | | | Humanities | 166 | |
| | | | Economics | 206 | |
| | | | Networks & cyber security | 61 | |
| | | | Behavioral Science | 129 | |
| | | | Nanotech & materials | 190 | |
| | | | Earth Science | 16 | |
| | | | Sports | 169 | |
| | | | Fiction, non-fiction, dictionary | 607 | |
| | | | Total books - 3028 | | |



**University Grants Commission
Appendix - XVI**

Information about the Equipment

| S.No. | Item description | Location Department | Value (in INR) | Present Condition | Date of Purchase |
|-------|--------------------------------------|---------------------|----------------|-------------------|------------------|
| 1 | Digital Oscilloscope (DSO) 50MHz | Physical World Lab | 386898.40 | Working | 23-08-2021 |
| 2 | Waveform Generator 20MHz | Physical World Lab | 577348.52 | Working | 23-08-2021 |
| 3 | Digital Multimeter DM-97 | Physical World Lab | 23750.00 | Working | 15-12-2021 |
| 4 | Digital Bench Top Digital Multimeter | Physical World Lab | 26932.50 | Working | 15-12-2021 |
| 5 | Digital Multimeter (Handheld) | Physical World Lab | 106910.00 | Working | 23-08-2021 |
| 6 | Handheld LCR meter -U1733C | Physical World Lab | 33120.24 | Working | 23-08-2021 |
| 7 | Multiple DC Power Supply | Physical World Lab | 75287.50 | Working | 15-12-2021 |
| 8 | Programmable D.C Power Supply | Physical World Lab | 49162.50 | Working | 15-12-2021 |
| 9 | Power Supply U8001A (0-30V/1-2A) | Physical World Lab | 320169.40 | Working | 23-08-2021 |
| 10 | Function Pulse Generator 10 Mhz | Physical World Lab | 57475.00 | working | 15-12-2021 |
| 11 | RF Signal Generator 150 Mhz | Physical World Lab | 36100.00 | working | 15-12-2021 |
| 12 | Soldering Station, WE-1010 | Physical World Lab | 14275.00 | working | 23-08-2021 |
| 13 | IC Regulated Power Supply | Physical World Lab | 16000.00 | working | 30-10-2021 |
| 14 | Constant Current Source | Physical World Lab | 24000.00 | working | 30-10-2021 |
| 15 | ESD Safe bench | Physical World Lab | 67,500.00 | working | 06-10-2021 |
| 16 | ESD Safe Chair | Physical World Lab | 9000.00 | working | 06-10-2021 |
| 17 | Stefan's Law Trainer Kit-6031 | Physical World Lab | 8692.00 | working | 15-12-2021 |
| 18 | Newton's Ring Apparatus- 6104 | Physical World Lab | 26125.00 | working | 15-12-2021 |
| 19 | Plank's Constant determination | Physical World Lab | 10545.00 | working | 15-12-2021 |
| 20 | Viscosity Measurement Apparatus | Physical World Lab | 8170.00 | working | 15-12-2021 |
| 21 | Wavelength Measurement of Laser | Physical World Lab | 18287.00 | working | 15-12-2021 |
| 22 | Malus Law Apparatus | Physical World Lab | 21612.50 | working | 15-12-2021 |
| 23 | Columb's Law Demonstrator | Physical World Lab | 11267.00 | working | 15-12-2021 |
| 24 | Magnetic Field Measurement | Physical World Lab | 24500.00 | working | 30-10-2021 |
| 25 | Plank's Constant apparatus | Physical World Lab | 25500.00 | working | 30-10-2021 |
| 26 | Franck-Hertz setup | Physical World Lab | 40500.00 | working | 30-10-2021 |
| 27 | Digital Gaussmeter | Physical World Lab | 13700.00 | working | 30-10-2021 |
| 28 | Millikan's Oil Drop Experiment | Physical World Lab | 46500.00 | working | 30-10-2021 |
| 29 | e/m Experiment | Physical World Lab | 23500.00 | working | 30-10-2021 |
| 30 | Study P-N junction Experimental | Physical World Lab | 26500.00 | working | 30-10-2021 |
| 31 | Study of a Transistor Amplifier | Physical World Lab | 6800.00 | working | 30-10-2021 |
| 32 | Application Of Operational Amplifier | Physical World Lab | 20700.00 | working | 30-10-2021 |
| 33 | Signal Generation of Amplifier | Physical World Lab | 14400.00 | working | 30-10-2021 |
| 34 | Stroboscope & Solid state lamp | Physical World Lab | 31600.00 | working | 30-10-2021 |
| 35 | Second-Order Network | Physical World Lab | 16500.00 | working | 30-10-2021 |
| 36 | Digital Circuit Development Platform | Physical World Lab | 68400.00 | working | 15-12-2021 |
| 37 | Analog Circuit Development Platform | Physical World Lab | 62700.00 | working | 15-12-2021 |
| 38 | Analog cum Digital Circuit Platform | Physical World Lab | 69585.00 | working | 15-12-2021 |
| 39 | Cobra Digicart Expert set | Physical World Lab | € 1470.00 | working | 27-08-2021 |
| 40 | Law of collision | Physical World Lab | € 3014.10 | working | 27-08-2021 |
| 41 | Law of Gyroscopes | Physical World Lab | € 1481.20 | working | 27-08-2021 |
| 42 | Mathematical Pendulum | Physical World Lab | € 370.00 | working | 27-08-2021 |
| 43 | Set Gas laws with glass jacket | Physical World Lab | € 1341.74 | working | 27-08-2021 |
| 44 | Peltier Effect: Cooling Engine | Physical World Lab | € 527. 80 | working | 27-08-2021 |
| 45 | Reflection, Transmission& Refraction | Physical World Lab | € 182.90 | working | 27-08-2021 |



| | | | | | |
|----|-------------------------------------|----------------------|--------------|---------|------------|
| 46 | Square Distance Law | Physical World Lab | € 369.40 | working | 27-08-2021 |
| 47 | Distance Inverse-square law | Physical World Lab | € 1607.00 | working | 27-08-2021 |
| 48 | Law of Lenses and optical | Physical World Lab | € 2288.80 | working | 27-08-2021 |
| 49 | Ripple Tank with LED light source | Physical World Lab | € 1998.60 | working | 27-08-2021 |
| 50 | Student set Mechanics-1 | Physical World Lab | € 541.50 | working | 27-08-2021 |
| 51 | Student set Electric motor | Physical World Lab | € 541.50 | working | 27-08-2021 |
| 52 | Advanced Physics Electromagnetism | Physical World Lab | € 2284.30 | working | 27-08-2021 |
| 53 | Van-De-Graaff generator, 230V/50Hz | Physical World Lab | € 884.30 | working | 27-08-2021 |
| 58 | Oscilloscopes & Function Generators | Makerspace | 15,93,000.00 | Working | 16-08-2021 |
| 59 | 3D Printer | Makerspace | 16,63,818.00 | Working | 20-08-2021 |
| 60 | 3D Scanner - Einscan SE | Makerspace | 2,27,150.00 | Working | 23-08-2021 |
| 61 | Soldering Stations | Makerspace | 1,27,440.00 | Working | 23-08-2021 |
| 62 | Vacuum Former | Makerspace | 39,000.00 | Working | 24-08-2021 |
| 63 | CNC Lathe Machine | Makerspace | 28,49,464.00 | Working | 06-09-2021 |
| 64 | Desktop | Makerspace | 16,75,600.00 | Working | 08-09-2021 |
| 65 | Doodler pen 3D | Makerspace | 21,990.00 | Working | 01-09-2021 |
| 66 | Pottery Wheel | Makerspace | 35,636.00 | Working | 04-02-2022 |
| 67 | CNC Co2 Laser Machine -6090 (80W) | Makerspace | 3,83,500.00 | Working | 04-03-2022 |
| 68 | CNC Routers-6090 | Makerspace | 2,83,200.00 | Working | 15-03-2022 |
| 69 | Belt & Disc Sander | Makerspace | 25,220.00 | Working | 23-03-2022 |
| 70 | Saw & Drill Press | Makerspace | 96,465.00 | Working | 21-03-2022 |
| 71 | Smart Line Follower Kit | Makerspace | 3,31,722.00 | Working | 19-01-2022 |
| 72 | Servo Stabilizer | Makerspace | 80,240.00 | Working | 17-02-2022 |
| 73 | Bosch Tools | Makerspace | 1,11,519.00 | Working | 13.02.2022 |
| 74 | Vinyl Cutting Plotter 24inch | Makerspace | 70,800.00 | Working | 15-03-2022 |
| 75 | Laptop & workstations | Computer Lab | 27,93,060.00 | Working | 10-03-2021 |
| 76 | Stand-alone Gel Imaging System | Nature's Machine Lab | 5,70,000.00 | Working | 31-01-2022 |
| 77 | Refrigerated Incubator Shaker | Nature's Machine Lab | 7,47,500.00 | Working | 31-01-2022 |
| 78 | PCR Thermal Cycler | Nature's Machine Lab | 3,79,000.00 | Working | 31-01-2022 |
| 79 | ThermoMixer | Nature's Machine Lab | 2,93,500.00 | Working | 31-01-2022 |
| 80 | pH meters | Nature's Machine Lab | 80,000.00 | Working | 02-02-2022 |
| 81 | Micropipettes | Nature's Machine Lab | 1,84,500.00 | Working | 02-02-2022 |
| 82 | Microbiological Still Incubator | Nature's Machine Lab | 1,65,000.00 | Working | 02-02-2022 |
| 83 | Mini Centrifuge | Nature's Machine Lab | 75,000.00 | Working | 02-02-2022 |
| 84 | - 20° C Freezer | Nature's Machine Lab | 2,48,800.00 | Working | 02-02-2022 |
| 85 | Transilluminator Dual LED | Nature's Machine Lab | 68,000.00 | Working | 02-02-2022 |
| 86 | Analytical Balance | Nature's Machine Lab | 53,040.00 | Working | 02-02-2022 |
| 87 | Electrophoresis Apparatus | Nature's Machine Lab | 2,15,876.00 | Working | 15-02-2022 |
| 88 | Vertical Laminar Air Flow | Nature's Machine Lab | 1,48,500.00 | Working | 01-03-2022 |
| 89 | Freezer Single Door | Nature's Machine Lab | 46000.00 | Working | 01-03-2022 |
| 90 | Spectrophotometer / Nanodrop | Nature's Machine Lab | 3,70,000.00 | Working | 01-03-2022 |
| 91 | Vertical Autoclave | Nature's Machine Lab | 1,61,910.00 | Working | 01-03-2022 |
| 92 | Binocular Microscopes | Nature's Machine Lab | 4,90,160.00 | Working | 03-03-2022 |
| 93 | Hemocytometers | Nature's Machine Lab | 13,500.00 | Working | 16-03-2022 |



University Grants Commission
Appendix - XVII

Sports Infrastructure

I. Facility

Open Play Ground(s) for outdoor sports

(a) Athletics, Football, hockey, Cricket, etc.

- Football field - Area 6,400 sqm and size 64m x 100 m
- Multipurpose open ground for athletics, hockey, cricket, and other outdoor sports. - Area 750 sqm and size 22.7m x 33m

(b) Track for Athletics:

- Jogging track along the football field
- Area 704 sqm and size 352m x 2m

(c) Basketball courts:

- 1 outdoor court - area 513.52 sqm and size 28m x 18.34m
- 1 indoor court - area 513.52 sqm and size 28m x 18.34m

(d) Squash/Tennis Courts:

- 3 Squash court - each court has an area of 62.484 sqm and size 6.4m x 9.82m
- 1 Tennis court - area 812.43 sqm and size 44.468m x 18.270m

(e) Swimming Pool:

- Swimming pool has been planned in Phase II of the project

(f) Indoor Sports Facilities including gymnasium:

- Gymnasium with modern equipment's
- Yoga room
- Music room

(g) Any other:

- Volleyball court area 444.74 sqm and size 24.250m x 18.340m
- Open air gym
- Indoor multipurpose hall (MPH) having following facilities
 - 5 table tennis court
 - 3 Badminton court
 - 1 Basketball court
 - 2 Billiard/ pool table
 - 2 Foosball table
 - Indoor games such as chess, carom, etc.



University Grants Commission
Appendix - XVIII

Information about the composition of the statutory bodies of the University

Separately for Governing Board, Executive Council, Board of Management, Academic Council, Finance Committee, Curriculum Advisory Board, Others

Governing body

| S.No. | Name | Profession | Full Postal Address | Date of Constitution |
|-------|--------------------------|---|---|---------------------------------|
| 1 | Neeraj Aggarwal | Chairperson of RHEF and Interim Chancellor | A1- 102, World Spa East, Sector-30/41, Gurgaon, Haryana-122001 | 20 th September 2021 |
| 2 | Rudra Pratap | Vice-Chancellor | Flat No. 504, Tower G, Falcon View, Sector 66A – Mohali, Punjab 160065 | |
| 3 | S. Shankar Shastry | | 140 Camino Don Miguel Orinda CA 94563, USA | |
| 4 | Hitesh Oberoi | Co-Founder and CEO, Info Edge Limited | B-49, SECTOR-44, NOIDA,201301, U.P. | |
| 5 | Rakesh Bharti Mittal | Vice Chairman, Bharti Enterprises, Bharti Foundation | Bharti Crescent, 1 Nelson Mandela Road, Vasant Kunj, Phase – II, New Delhi, South Delhi, India 110070 | |
| 6 | Sumita Ambasta | Founder and Executive Director, Flowering Tree Management Pte. Ltd. | "12 Cove Grove Sentosa Cove Singapore 098093" | |
| 7 | Chancellor nominee (TBD) | | | |
| 8 | Chancellor nominee (TBD) | | | |
| 9 | Govt. nominee (TBD) | | | |
| 10 | Sanjay Bhatnagar | Registrar | Vila Number 20-Alliance Anand, Near Jeevan Tara Resort – Goverdhan Vilas, Udaipur- 313001 | |

Board of Management

| S.No. | Name | Profession | Full Postal Address | Date of Constitution |
|-------|----------------------|---|---|----------------------------------|
| 2 | Rudra Pratap | Vice-Chancellor | Flat No. 504, Tower G, Falcon View, Sector 66A – Mohali Punjab 160065 | 20 th September, 2021 |
| 3 | Alok Mittal | Co-founder & CEO, Indifi Technologies Pvt. Ltd. | C-902, Bestech Park View spa, sector-47 Gurgaon-122018 | |
| 4 | Ambarish Raghuvanshi | Former CFO InfoEdge Ltd. | E 112, Malcha Marg, B2 stilt area basement lift, New Delhi – 110001 | |
| 5 | Mohit Thukral | Managing & Managing Partner, Vivtera | DLF City - Phase V, Sector 53, Gurgaon, Haryana - 122002 | |
| | | | | |



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| | | | |
|----|------------------------------------|--------------------------------------|--|
| 7 | Vikrant Bhargava | Managing Partner, Veddis | Palatium House, 1 North End Way, London, NW3 7ET, United Kingdom |
| 8 | Meeta Malhotra | External member | A31 Shefali Apt 26 Aga Abbas Ali Road Bangalore 560042 |
| 9 | Pallavi Jain | Director of Strategy and Programs | D-402, JLPL Falcon View Apartments, Sector 66A, Mohali, Punjab 160065 |
| 10 | Member outside RHEF (TBD) | | |
| 11 | Aditya Malik | Professor | V10/30, 2nd Floor, DLF Phase 3, Gurgaon - 122002 |
| 12 | Amrik Sen | Assistant Professor | B-6, Sagarika Enclave, Sagarbhanga, Durgapur, 713211 |
| 13 | Rucha Joshi | Assistant Professor | Senior HIG-DD-5, Housing Board Colony, Near Science Center, Sector-08, Saddu, Raipur -492014 |
| 14 | Saumya Jetley | Assistant Professor | 3B, Residence Du Val, Palaiseau - 91120, Ile De France, France |
| 15 | Director, Higher Education, Punjab | State Government Nominee | Sector 9, Chandigarh, 160017 |
| 16 | Sanjay Bhatnagar | Registrar | Vila Number 20- Alliance Anand, Near Jeevan Tara Resort - Goverdhan Vilas, Udaipur- 313001 |

Academic council

| S.No. | Name | Profession | Full Postal Address | Date of Constitution |
|-------|---------------|--|--|----------------------------------|
| 1 | Rudra Pratap | Vice-Chancellor | Flat No. 504, Tower G, Falcon View, Sector 66A - Mohali Punjab 160065 | 20 th September, 2021 |
| 2 | Aditya Malik | Professor | V10/30, 2nd Floor, DLF Phase 3, Gurgaon - 122002 | |
| 3 | Monika Sharma | Assistant Professor | House No. 3458, Sector 23 D, Chandigarh - 160023 | |
| 4 | Ravi Jasuja | Director of Translational Research and Discovery, BWH, Harvard Medical School | 220, South Ave, Weston, MA 02493 USA | |
| 5 | Ravi Kothari | Former Professor and Head of Department of Computer Science, Ashoka University | E-7 Geetanjali Enclave New Delhi 110017 | |
| 6 | Naveen Garg | Janaki and KA Iyer Chair Professor in the Computer Science and Engineering Department, IIT Delhi | Computer Science and Engineering Indian Institute of Technology Delhi Hauz Khas, New Delhi 110016 | |



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| | | | | |
|---|-------------------|--|--|--|
| 7 | Bharadwaj Amrutur | Chairman, Robert Bosch Center for Cyber Physical Systems, Division of Interdisciplinary Sciences, IISc Bangalore | C V Raman Ave, Indian Institute of Science, Mathikere, Bangalore 560012 | |
| 8 | Govt. nominee | | | |
| 9 | Sanjay Bhatnagar | Registrar | Vila Number 20- Alliance Anand, Near Jeevan Tara Resort – Goverdhan Vilas, Udaipur- 313001 | |

Finance Committee

| S.No. | Name | Profession | Full PostalAddress | Date of Constitution |
|-------|----------------------|---|--|----------------------------------|
| 1 | Rudra Pratap | Vice Chancellor | Flat No. 504, Tower G, Falcon View, Sector 66A – Mohali Punjab 160065 | 20 th September, 2021 |
| 2 | Aditya Malik | Dean, Academic Affairs & Professor | V10/30, 2nd Floor, DLF Phase 3, Gurgaon – 122002 | |
| 3 | Ambarish Raghuvanshi | Founder and Trustee (Nominated by the Foundation) | E 112, Malcha Marg, B2 stilt area basement lift, New Delhi – 110001 | |
| 5 | Sanjay Bhatnagar | Registrar | Vila Number 20- Alliance Anand, Near Jeevan Tara Resort – Goverdhan Vilas, Udaipur- 313001 | |



Academic Advisory Board

| S. No. | Name | Designation |
|--------|----------------------|---|
| 1 | Dr. Abhijit Banerjee | Co-Founder, J-PAL Professor of Economics, MIT Nobel Laureate |
| 2 | Dr. Anant Agarwal | CEO, edX Professor of EECS, MIT |
| 3 | Dr. Arvind Raman | Executive Associate Dean, Faculty and Staff, Robert V. Adams Professor in Mechanical Engineering, Purdue University |
| 4 | Dr. Ashish Nanda | Senior Lecturer, Harvard Business School Former Director, IIM Ahmedabad |
| 5 | Dr. BN Jain | Former Vice Chancellor, BITS Pilani Former Deputy Dean, IIT Delhi |
| 6 | Dr. Frances Ligler | Ross Lampe Distinguished Professor, NC State & UNC Chapel Hill |
| 7 | Dr. Howard Griffiths | Professor of Plant Ecology, Vice-Chancellor's Special Advisor on India, University of Cambridge |
| 8 | Dr. James Holloway | Provost and EVP for Academic Affairs, University of New Mexico |
| 9 | Dr. Jennifer Cochran | Shriram Chair, Department of Bioengineering, Stanford University |
| 10 | Dr. Julia Ross | Dean of Engineering, Virginia Tech |
| 11 | Dr. Kaushik Basu | Professor of Economics & Carl Marks Professor of International Studies, Cornell University |
| 12 | Dr. Krishna Palepu | Ross Graham Walker Professor of Business Administration, Former Senior Associate Dean, Harvard Business School |
| 13 | Dr. Pankaj Jalote | Founding Director, IIIT Delhi |
| 14 | Dr. Rajesh Gupta | Professor and Qualcomm Endowed Chair, Computer Science & Engineering, UC San Diego |
| 15 | Dr. Shankar Sastry | Former Dean of Engineering, Professor of EECS, UC Berkeley |
| 16 | Dr. Sharad Malik | Chair, Department of Electrical Engineering, Princeton University |
| 17 | Dr. Sriram Rajamani | Managing Director, Microsoft Research Labs, India |
| 18 | Dr. Vijay Kumar | Nemirovsky Family Dean, Penn Engineering, University of Pennsylvania |
| 19 | Dr. Yannis Yortsos | Dean of Viterbi School of Engineering, University of Southern California |

Curriculum Advisory Group - Computer Science and Artificial Intelligence

| S. No. | Name | Designation |
|--------|---------------------|---|
| 1 | Dr. Aakash Tyagi | Professor of Practice of Computer Science & Engineering, Texas A&M University |
| 2 | Dr. Chilukuri Mohan | Professor of Electrical Engineering and Computer Science, Syracuse University |
| 3 | Dr. K Gopinath | Professor, Plaksha University, Punjab |
| 4 | Dr. Ravi Kothari | Former Chief Scientist, IBM Research India Former Professor of Computer Science, Ashoka University |
| 5 | Dr. Saumya Jetley | Assistant Professor, Plaksha University, Punjab |
| 7 | Dr. Sunil Prabhakar | Professor and Head of Computer Science, Purdue University |

Curriculum Advisory Group - Robotics and Cyber-Physical Systems

| S. No. | Name | Designation |
|--------|--------------------|---|
| 1 | Dr. Dhiraj Sinha | Assistant Professor, Plaksha University, Punjab |
| 2 | Dr. Hanumant Singh | Professor, Electrical and Computer Engineering, Northeastern University |
| 3 | Dr. Ramesh Singh | Professor, Mechanical Engineering, IIT Bombay |
| 4 | Dr. Richard Voyles | Director of Robotics Accelerator and Daniel C. Lewis Professor, Purdue Polytechnic, Purdue University |



| | | |
|---|------------------------------|---|
| 5 | Dr. Rudra Pratap | Vice Chancellor, Plaksha University, Punjab |
| 6 | Dr. Sanjay Bose | Professor, Plaksha University, Punjab |
| 7 | Dr. Shashank Tamaskar | Associate Professor, Plaksha University, Punjab |

Curriculum Advisory Group - Biological Systems Engineering

| S. No. | Name | Designation |
|---------------|----------------------------|---|
| 1 | Dr. BL Ramakrishna | Chief Academic Advisor, Plaksha University, Punjab |
| 2 | Dr. Mitali Samaddar | Curriculum, Lab and Research Consultant, Plaksha University, Punjab |
| 3 | Dr. Monika Sharma | Assistant Professor, Plaksha University, Punjab |
| 4 | Dr. Ravi Jasuja | Director, Translational Research and Discovery, BWH, Harvard Medical School |
| 5 | Dr. Rohit Bhargava | Bliss Faculty Scholar and Founder Professor in Bioengineering, University of Illinois at Urbana-Champaign |
| 6 | Dr. Rucha Joshi | Assistant Professor, Plaksha University, Punjab |
| 7 | Dr. Rudra Pratap | Vice Chancellor, Plaksha University, Punjab |

Curriculum Advisory Group - Data Science, Economics and Business

| S. No. | Name | Designation |
|---------------|-----------------------------------|---|
| 1 | Dr. Milind Sohoni | Area Leader & Professor, Operations Management, Deputy Dean Academic Affairs, Indian School of Business |
| 2 | Dr. Ram Singh | Professor, Department of Economics, Delhi School of Economics |
| 3 | Srikanth Velamakanni | Co-founder, Group Chief Executive & Vice-Chairman, Fractal Analytics Founder and Trustee, Plaksha |
| 4 | Dr. Subhashis Gangopadhyay | Dean, Indian School of Public Policy Founder and Research Director, India Development Foundation |
| 5 | Dr. Yadati Narahari | Professor, Department of Computer Science and Automation, Indian Institute of Science |



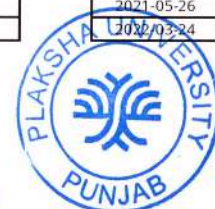
University Grants Commission

Appendix - XIX

Information about the Non-Teaching Staff of the University

| Name | Designation | Age | Qualification | Scale of Pay ² | Date of Appointment | Trained Yes/No If Yes, Details |
|---------------------|--|-----|-------------------------------|---------------------------|---------------------|--------------------------------|
| A Raghuvver Kumar | Assistant Librarian | 26 | M.L.I.S | | 2021-04-02 | Yes |
| Abhilash Thakur | Sports Officer | 28 | M.P.Ed | | 2021-10-27 | Yes |
| Ajit Godara | Manager | 49 | MBA | | 2019-10-01 | Yes |
| Alka Jain | Director | 58 | BA (Hons) & B. Ed. | | 2021-09-20 | Yes |
| Amandeep | Assistant | 29 | B.Com (Honors) | | 2019-09-01 | Yes |
| Amarjeet Singh | VP Administration | 64 | M Phil & MSc | | 2021-04-01 | Yes |
| A Adarsh | Senior Associate | 29 | PG Diploma & B.Tech. | | 2021-07-12 | Yes |
| Amit Loomba | Assistant Manager | 49 | BA | | 2019-08-26 | Yes |
| Amrit Kalkat | Associate | 23 | MA | | 2022-05-16 | Yes |
| Anand K Verma | Senior Makerspace Facilitator | 31 | B.Tech | | | Yes |
| Anjali Anand | Executive Assistant | 39 | MBA | | 2021-10-07 | Yes |
| Ankur Vinayak | Associate | 30 | B.Tech | | 2021-11-08 | Yes |
| Ankur Wadhwa | Assistant Manager | 38 | BA | | 2021-07-21 | Yes |
| Anshuman Bhuchar | Director | 40 | MBA | | 2020-11-16 | Yes |
| Arun Sharma | Director | 60 | M Tech | | 2021-11-24 | Yes |
| Astha Arya | Manager | 29 | MPA & B.Tech | | 2021-02-22 | Yes |
| Ayush Kukreja | Associate | 23 | P.G.D & BA | | 2021-11-06 | Yes |
| Chandan Kumar Dubey | Senior Web Developer | 31 | B.Tech | | 2022-03-16 | Yes |
| Darwani Ram Rastogi | Senior Lab Instructor | 51 | M.Tech | | 2022-01-10 | Yes |
| Devansh Toumar | Senior Associate | 25 | PG Diploma | | 2021-07-19 | Yes |
| Diluar Hussain | Library Assistant | 28 | M.L.I.S. & PGDLAN | | 2021-11-15 | Yes |
| Gittaly Dhingra | Instructional Manager | 38 | PhD | | 2022-05-02 | Yes |
| Godwin Allwin | Associate | 27 | B.Com | | 2021-01-04 | Yes |
| Gopal Gupta | Associate | 27 | BBA | | 2022-05-04 | Yes |
| Gurpreet Singh | Lab Technician | 26 | M.Sc. | | 2022-05-04 | Yes |
| Jeeva Mathew | Manager | 29 | The Young India Fellowship | | 2019-05-01 | Yes |
| Joginder Guleria | Senior Supervisor | 51 | | | 2021-08-01 | Yes |
| Kanchi Khanna | Senior Director, Outreach & Admissions | 55 | MBA | | 2020-09-01 | Yes |
| Karishma Chandna | Assistant Manager | 29 | BSc | | 2021-04-26 | Yes |
| Kiran Kashyap | Library Assistant | 46 | M .Lib. & IS | | 2021-08-01 | Yes |
| Lanusenia Jamir | Plaksha Tutorial Fellow | 28 | M.A | | 2022-04-04 | Yes |
| Manita Sharma | Assistant Manager | 29 | Master of Tourism & Travel | | 2021-03-10 | Yes |
| Muhammed Ansar T.K. | Senior Library Assistant | 27 | M. Lisc & PGDLAN | | 2021-11-25 | Yes |
| Namita Chandhoke | Program Manager | 44 | MBA | | 2022-01-17 | Yes |
| Neetu Sharma | Instructional Manager | 39 | P.hD. | | 2022-04-25 | Yes |
| Nikita Tandon | Associate | 27 | MA | | 2020-02-10 | Yes |
| Nina Mehta | Manager | 46 | MA | | 2019-03-07 | Yes |
| Palak Sharma | Admissions Counsellor | 21 | B.Com | | 2021-11-24 | Yes |
| Parneet Shergill | Deputy Director | 51 | M.Sc. | | 2022-02-15 | Yes |
| Pankaj Kumar | Associate - Procurement | 24 | BBA | | 2021-10-11 | Yes |
| Pawan Kumar | Associate Director | 37 | PGDM | | 2021-08-16 | Yes |
| Poonam Dulguch | Front Desk Executive | 32 | M.A | | 2022-03-03 | Yes |
| Priyanka Saklani | Manager | 33 | MBA | | 2022-02-15 | Yes |
| R Gokul Kumar | Senior Associate | 24 | PG Diploma in Liberal Studies | | 2021-02-01 | Yes |
| Radhika Gupta | Manager - Strategy | 35 | MBA | | 2021-12-20 | Yes |
| Rahul Shukla | Safety Officer | 35 | M.Tech | | 2022-01-17 | Yes |
| Rajesh Sawhney | Director | 55 | Masters in Management | | 2021-11-01 | Yes |
| Rinku Singh | Manager | 47 | MBA | | 2022-04-04 | Yes |
| Rishi Rajpoot | Manager | 42 | MBA | | 2021-08-16 | Yes |
| Rohit Chadha | Manager | 35 | MBA | | 2021-08-18 | Yes |
| RP Vishal | Associate | 22 | Diploma in Computer | | 2021-10-14 | Yes |
| Sachin Verma | Manager | 30 | Company Secretary & MBA | | 2019-09-16 | Yes |
| Sachpreet Kaur | Instructional Manager | 31 | PhD | | 2022-05-02 | Yes |
| Sagar Jha | Senior Associate | 21 | B.Com | | 2022-03-24 | Yes |
| Sahiba Sahni | Senior Associate | 28 | Masters in Psychology | | 2022-01-10 | Yes |
| Sakshi Saraf | Associate | 24 | BCA | | 2022-04-01 | Yes |
| Sandeep Purohit | Associate | 32 | B.Com | | 2020-02-17 | Yes |
| Sandeep Vinod Julka | Manager | 36 | PGD | | 2021-04-21 | Yes |
| Sanjay Bhatnagar | Registrar | 59 | MBA & MSc. | | 2021-11-01 | Yes |
| Santosh | Warden | 39 | BA Psychology | | 2021-10-01 | Yes |
| Sarika Chugh | Senior Manager | 44 | | | 2022-01-03 | Yes |
| Saryu Bansal | Senior Manager | 37 | Masters in Mass Communication | | 2021-03-22 | Yes |
| Shaina Gupta | Senior Admission Counsellor | 29 | B.Tech | | 2021-11-29 | Yes |
| Shruti Kochar | Senior Associate | 27 | B.Com | | 2021-05-26 | Yes |
| Somveer Singh | Senior Manager | 39 | MBA | | 2022-03-24 | Yes |

² at par or above the pay scale recommended by the 7th Pay Commission of the UGC.



| | | | |
|----------------------|-----------------------|----|---------------|
| Sonu | Warden | 30 | B.A |
| Srabani Chanda Ghosh | Director | 51 | MBA |
| Srishti Malapath | Manager | 27 | PGDM |
| Sureet Sondhi | Manager | 34 | BHM |
| Tanuj Kumar | Senior Manager | 46 | MBA |
| Tarun Punjabi | Senior Associate | 30 | Post Graduate |
| Vanita Shharma | Instructional Manager | 35 | P.h.D. |
| Vartika Bharti | Senior Manager | 34 | MBA |
| Vikash Khatri | Senior Associate | 39 | MBA |
| Yatin Pasricha | Senior Manager | 38 | B.Tech |

| | |
|------------|-----|
| 2021-10-01 | Yes |
| 2020-02-03 | Yes |
| 2021-09-01 | Yes |
| 2021-07-26 | Yes |
| 2021-08-01 | Yes |
| 2022-05-04 | Yes |
| 2022-03-01 | Yes |
| 2021-08-30 | Yes |
| 2020-10-12 | Yes |
| 2022-05-10 | Yes |



University Grants Commission
Appendix XX A

FORM NO. INC-13

THE COMPANIES ACT, 2013

MEMORANDUM OF ASSOCIATION

[Pursuant to Section 8 and Rule 19(2) the Companies (Incorporation) Rules, 2014]

REIMAGINING HIGHER EDUCATION FOUNDATION

(A COMPANY LIMITED BY GUARANTEE AND NOT HAVING SHARE CAPITAL)

1. The name of the company is "REIMAGINING HIGHER EDUCATION FOUNDATION".
2. The registered office of the company will be situated in the National Capital Territory of Delhi.
3. (A) The objects for which the company is established are:
 1. To promote education in the field of humanities, commerce, economics, medical, engineering, management, computer software, hardware, information technology and any other field by establishing schools, colleges, institutions, education and research centres for upliftment of society, not with the motive of profit.
 2. No other object of the company will be carried out without obtaining prior approval/ no objection certificate from the concerned authorities.
 3. None of the object of the company will be carried out on commercial basis.

(B) The doing of all such other lawful things as considered necessary for the furtherance of the above objects:

1. To promote the study, practice and knowledge of music, art, science and to give or to invite writers, speakers, poets, composers, philosophers, religious preachers and to purchase copyrights, books, pamphlets, articles, magazines and to give prizes and awards.
2. To accumulate capital by means of monthly subscription fees or otherwise from members on such terms as the Company may from time to time arrange and accept and to accept donations, contribution grants either in cash or in kind, from domestic and foreign sources, from any person, persons, companies, corporations, institutions on such terms and for such objects which are in conformity with the objects and on conditions, including the conditions of associating the name of such person, or persons and such purpose or purposes are in conformity with the object of the

For Reimagining Higher Education Foundation


Authorised Signatory

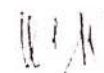


Company.

3. To accumulate the income of the funds of the Company and to utilize the same with the corpus for promotion of the objects of the Company, unless otherwise determined to be as accumulated.
4. To purchase, acquire, take on lease, sub-lease, exchange, hire, mortgage or otherwise any movable properties including furniture, fixtures, books, conveyances, appliances, instruments, vehicles etc. or immovable properties and any rights and privileges necessary or convenient for the purposes of the Company and to construct, rejuvenate, rehabilitate, and develop immovable property consistent with the object or otherwise deal with all or any part of the assets and rights of the Company for cash or any other consideration with a view to the promotion of the objects of the Company.
5. To invest in bank deposits and government bonds and/or retain the investment and properties received as donations to be utilized towards objects of the Company.
6. To appoint committees, advisory boards, governing body for any institution, established, run and maintained by the Company.
7. To retain and/or employ skilled, professional or technical advisers and other staff and workers in connection with the objects of the Company and to pay there for such fees or remuneration as may be considered expedient.
8. To indemnify the employees, staff of the Company against proceedings, losses, costs, damages, claims and demands under Law or Equity or otherwise in respect of accidents, injury, death of employees, staff of the Company employed by the Company whether as workman, clerk, officer, technician etc, and to appoint Advisers or Insurers to investigate the circumstances of accidents, injury or damage and to take steps to prevent the same and to oppose, resist, compromise or satisfy fully or in part such claims and demands.
9. To utilize funds for any charitable purposes and events, in conformity with the objects of the Company.
10. To provide education in academic and vocational courses and to conduct examinations and to award degrees, diplomas, scholarship, prizes and cash assistance in such form and manner as may be decided by the Company.
11. To construct, establish, run, conduct schools, college, universities, institutions, libraries, classes, workshops, hostels and provide learning, understanding, data, information, skills, training, instructions, practice sessions, guidance in all areas, branches, disciplines, fields, matters including asset management, aviation, banking, business and other allied areas in conformity with the objects of the Company.

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12. To provide recreational facilities both indoor and outdoor and to provide grocery, provisions, medical and other household goods of daily necessities at subsidized rates.
13. To construct or provide accommodation or other suitable rooms, buildings, places and to permit the same or part thereof to be used on such terms and conditions and for any performance for meetings, exhibitions, concerts, lectures, dinners, entertainment, reading, writing and newspaper rooms, library, refreshment rooms, dressing rooms and to furnish the same with furniture, implements, machinery and conveniences as may be deemed desirable and to provide garden, green houses, parks for recreation and amusement and entertainment.
14. To do all other lawful acts, things and deeds as are incidental and conducive to the attainment of the above objects.
15. To enter into any arrangements with any Government or Semi-Government Authority, Municipal, Local, or otherwise and to obtain from any such Government or Authority any right concessions and privileges that may seem conducive to the Company's objects or any of them.
16. To establish and support or aid in the establishment and support of associations, institutions and conveniences calculated to benefit any of the employees or ex-employee of the Company or the dependants or connections of such persons and to grant pensions and allowances and to make payments towards insurance.
17. To pay the costs, charges of and expenses preliminary or incidental to the formation establishment and registration of the Company, and all expenses, which the Company may lawfully pay, having regard to the provisions of the Companies Act, 2013, for or incidental to the raising of money for the Company.
18. To enter into contracts necessary or desirable for the conduct of the Company's affairs, including contracts, indemnity or guarantee of any kind whatsoever.
19. To frame schemes, Rules and Regulations, for attaining of the objects of the Company and bye-laws for conducting the affairs of the Company from time to time.
20. To engage the services of lawyers, bankers, architects, brokers or any other experts, technical, any professional or otherwise, on such terms and conditions as may be determined.
21. To take such other steps and to conduct such other undertaking or activities as may be considered necessary or expedient for achieving and furthering the objectives of the Company.

For Reimagining Higher Education Foundation

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Provided that the Company shall not support with funds or endeavour to impose, or procure to be observed by its members or others, any regulation or restriction which, as an object of the Company would make it a Trade Union

4. The Objects of the Company extend to the **Whole of India**.
5. (i) The profits, if any, or other income and property of the company, whensoever derived, shall be applied, solely for the promotion of its objects as set forth in this memorandum.

(ii) No portion of the profits, other income or property aforesaid shall be paid or transferred, directly or indirectly, by way of dividend, bonus or otherwise by way of profit, to persons who, at any time are, or have been, members of the company or to any one or more of them or to any persons claiming through any one or more of them.

(iii) No remuneration or other benefit in money or money's worth shall be given by the company to any of its members, whether officers or members of the company or not, except payment of out-of-pocket expenses, reasonable and proper interest on money lent, or reasonable and proper rent on premises let to the company.

(iv) Nothing in this clause shall prevent the payment by the company in good faith of prudent remuneration to any of its officers or servants (not being members) or to any other person (not being member), in return for any services actually rendered to the company

(v) Nothing in clauses (iii) and (iv) shall prevent the payment by the company in good faith of prudent remuneration to any of its members in return for any services (not being services of a kind which are required to be rendered by a member), actually rendered to the company;
6. No alteration shall be made to this Memorandum of Association or to the Articles of Association of the Company, which are for the time being in force, unless the alteration has been previously submitted to and approved by the Registrar of Companies.
7. The liability of the members is Limited.
8. Each member, undertakes to contribute to the assets of the company in the event of its being wound up while he is a member or within one year afterwards, for payment of the debts or liabilities of the company contracted before he ceases to be a member and of the costs, charges and expenses of winding up, and for adjustment of the rights of the contributories among themselves such amount as may be required not exceeding a sum of Rs. 50,000.
9. True accounts shall be kept of all sums of money received and expended by the company and the matters in respect of which such receipts and expenditure take place, and of the property, credits and liabilities of the company; and, subject to any reasonable restrictions



For Reimagining Higher Education Foundation


Authorised Signatory



as to the time and manner of inspecting the same that may be imposed in accordance with the regulations of the company for the time being in force, the accounts shall be open to the inspection of the members. Once at least in every year, the accounts of the company shall be examined and the correctness of the balance-sheet and the income and expenditure account ascertained by one or more properly qualified auditor or auditors




10. If upon a winding up or dissolution of the company, there remains, after the satisfaction of all the debts and liabilities, any property whatsoever, the same shall not be distributed amongst the members of the company but shall be given or transferred to such other company having objects similar to the objects of this company, subject to such conditions as the Tribunal may impose, or may be sold and proceeds thereof credited to the Rehabilitation and Insolvency Fund formed under section 269 of the Act.
11. The Company can be amalgamated only with another company registered under section 8 of the Act and having similar objects.
12. We, the several persons whose names, addresses, descriptions and occupations are hereunto subscribed are desirous of being formed into a company not for profit, in pursuance of this Memorandum of Association:

| S. No. | Name, Addresses, Description and occupation of each subscriber | Photo and Signature of subscribers | Name, Addresses, Description and signatures of witnesses |
|--------|--|---|---|
| 1- | VINEET GUPTA S/O JAI DEV GUPTA ADDRESS: A 130, 2 nd FLOOR, NEW FRIENDS COLONY, NEW DELHI - 110065. OCCUPATION: BUSINESSMAN |   | I witness to subscribe but who has subscribed and signed in my presence Further, I have verified his identity details for the identification and relieved myself of identification particulars filled in. Deepankhi (DEEPANKHI SINGHANI) R/o 301 Purnamanand Colony near Anandpur Bagh, New Delhi - 110029 |

For Reimagining Higher Education Foundation

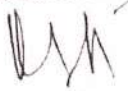

Authorised Signatory



| | | |
|---|---|--|
| <p>2. ASHISH GUPTA S/O MADAN GOPAL GUPTA ADDRESS: 14/903 HERITAGE CITY MG ROAD GURGAON - 122002 OCCUPATION: CONSULTANT</p> |   | <p>I witness to make notes who have submitted and signed in my presence further, I have verified their identity details (IDC) for their identification card and verified myself of their identification particulars filled in.</p> |
| <p>3. MUHIT THUKRAL S/O MADAN THUKRAL ADDRESS: 33, SILVER OAKS AVENUE, DLF PHASE I, GURGAON - 122002 OCCUPATION: SERVICEMAN</p> |  | <p>Deepanshi (DEEPANSHI CHINDHAWAN) D/O, 361, Park Road Colony, Near Mahajil Nagar, New Delhi - 110004. M no - 941773 (108) AOP no - 16355</p> |

Place: NEW DELHI - Dated the 20th Day of DECEMBER, 2016

For Reimagining Higher Education Foundation


Authorized Signatory





THE COMPANIES ACT, 2013
(COMPANY LIMITED BY GUARANTEE NOT HAVING SHARE CAPITAL UNDER
SECTION 8 OF THE COMPANIES ACT, 2013)

**ARTICLES OF ASSOCIATION
OF
REIMAGINING HIGHER EDUCATION FOUNDATION**

PRELIMINARY

Subject as hereinafter provided that the Regulations contained in Table "H" in the Schedule I to the Companies Act, 2013 shall apply to the Company except in so far as otherwise expressly incorporated herein below:

INTERPRETATION

1. In these Articles unless there be anything repugnant to the subject or context the following words shall have the meaning written against them:
 - (i) "The Company" means **REIMAGINING HIGHER EDUCATION FOUNDATION**.
 - (ii) "The Articles" mean and include the Articles of Association of this Company as may be in force from time to time.
 - (iii) "The Act" means the Companies Act, 2013 as amended by any Act or Acts for the time being in force in the Union of India.
 - (iv) "The Directors" means a director appointed to the Board of the Company.
 - (v) "Board of Directors or "Board" or means the Board of Directors of the Company.
 - (vi) "Member" means a member of the Company and includes the subscribers to the Memorandum of the Company.
 - (vii) "Month" means a calendar month.
 - (viii) "Year" means the calendar year and "Financial Year" means the period in respect of which the income and expenditure account of the Company, laid before it at the annual general meeting is made up whether the period is of full twelve months or not.
 - (ix) "The Register" shall mean the Register of members kept as required by Section 88 of the Act.
 - (x) "Office" shall mean the Registered Office for the time being of the Company.
 - (xi) "In Writing" shall include printed, lithographed, type written and visibly represented or reproduced by any other mode.



- (xii) "The Secretary" means the Secretary General and/or the Executive Secretary and/or Honorary Secretary for the time being of the Company and shall include any individual appointed to perform the duties of the Secretary temporarily.
- (xiii) (a) Words importing the singular number include plural and vice-versa.
(b) Words importing the masculine gender shall include the feminine gender also.
(c) Words importing persons include corporations and firms as well as individuals.
(d) Words or expression contained in the Articles (unless the context otherwise requires) shall bear
the same meaning as given to them in the Act.
(e) Words and expressions which have a special meaning assigned to them in the Act shall have the same meaning in these Articles.

PRIVATE COMPANY

2. The Company is a Private Company limited by guarantee without share capital and accordingly,
- (i) The number of members of the Company (exclusive of (i) persons who are in the employment of the Company and (ii) persons, who having been formerly in the employment of the Company were members of the Company while in that employment and have continued to be members after employment ceased) shall be limited to two hundred (200).
- (ii) No invitation shall be issued to the public to subscribe for any shares or debentures of the Company.
- (iii) Any invitation or acceptance of deposits from persons other than its members, directors or their relatives is hereby prohibited.
- (iv) Restricts the right to transfer its shares, if any.

MEMBERSHIP

Number of Members

3. The number of members with which the Company proposes to be registered is three (3) but the Board may, from time to time, whenever the company or the activities of the Company requires it, register an increase in the number of members, which shall not increase two hundred (200).
- (i) The subscribers to the Memorandum shall be first members of the Company.
- (ii) Such other persons as the Board shall in accordance with the provisions of these Articles admit to membership shall be members of the Company provided that such persons are eligible for membership in terms of these articles.
- (iii) There shall be only one class of Members i.e. Members.



Eligibility of Membership

Members

4. Any individual, association or a company or a body corporate shall be eligible to become a member of the Company, shall be required to pay such entrance fee as may be prescribed from time to time, as fixed by the Board.

Application of admission of members

5. (i) An individual or a company or a body corporate desirous of becoming a member shall make an application to the Company in the prescribed form expressing the intention to become a member accompanied by a remittance towards the entrance fee as may be prescribed from time to time as fixed by the Board. The application so made shall contain an endorsement that the member is proposed and seconded by another member. and shall bear signatures of the proposer and the seconder. On receipt of such application and entrance fee, the application shall be placed before the Board at its meeting, or by circulation and if approved, the said applicant shall be informed accordingly and shall be enrolled as a member. In case the membership is refused by the Board, the entrance fee shall be refunded to the said applicant.

Consequence of misstatement in application form

- (ii) The decision of the Board, on any question which may arise as to the eligibility or otherwise of an applicant for admission as member of the Company shall be final and they shall not be bound to assign any reason for their decision.

Cessation of Membership

6. A member shall cease to be a member:
 - (i) If by a letter addressed to the Company, the member voluntarily resigns from membership;
 - (ii) If he is adjudged insolvent, provided however that the Board shall be entitled to reinstate such a member as a member of the Company on his producing satisfactory proof that the adjudication order was annulled as he ought not to have been adjudged an insolvent, and/or has paid his debts in full;
 - (iii) If he is convicted by a court of any offence involving misconduct or moral turpitude.
 - (iv) If a member being a corporate body, a resolution is passed for its winding up and an order for winding up is made by a court of competent jurisdiction.

Consequent to cessation of membership



7. Persons ceasing to be members under Article 6 shall not be eligible to become members at any time thereafter unless the Board shall otherwise determine.

Other Consequences

8. A person ceasing to be a member by any of the provision of these Articles shall forfeit all his rights but he shall nevertheless remain liable for and shall pay to the Company all money, which at the time of his ceasing to be a member may be due to the Company.

Rights and privileges of members

9. Subject to the provisions of the Act, the Board may from time to time make such rules as to the manner in which the members may exercise their rights and privileges as members of the Company.

Register of Members

10. A Register of Members shall be kept in which shall be set forth the name, address and occupation of every member of the Company for the time being and in which all changes in membership from time to time taking place, shall be recorded. An index of the names of the members shall be kept unless the Register of members is in such form as to constitute an index.

COPIES OF MEMORANDUM AND ARTICLES TO BE SENT TO MEMBERS

11. Copies of the Memorandum and Articles of Association of the Company and other documents referred to in Section 4 and Section 5 of the Act shall be sent by the Company to every Member at his request, within seven days of the request.

BORROWING POWERS

Power to borrow

12. Subject to the provisions of Section 180 of the Act, and of these Articles the Board may, from time to time at its discretion, by a resolution passed at a meeting of the Board raise or borrow or secure the payment of any sum or sums of money for the Company.

MORTGAGE

Mortgage



13. The payment or repayment of money borrowed as aforesaid may be secured in such manner and upon such securities in all respects as the Board may think fit.

Register of Charges

14. The Board shall cause proper register of mortgages to be kept in accordance with the provisions of Section 85 of the Act, of all mortgages and charges specifically affecting the property of the Company; and shall cause the requirements of Sections 77, 78 and 79 of the Act in that behalf to be duly complied with, so far as they fall to be complied with by the Company.

MEETING OF MEMBERS

Annual General Meeting

15. Subject to the provisions of Section 96 of the Act, the First Annual General Meeting within a period of nine months from the date of closing of the first financial year, and thereafter an Annual General Meeting shall be held from the date of closing of the first financial year, provided that not more than fifteen months shall elapse between the date of one Annual General Meeting and that of the next. Provided further that if the Company holds its first Annual General Meeting as aforesaid, it shall not be necessary for the Company to hold any Annual General in the year of its incorporation. Nothing contained in the foregoing provisions shall be taken as affecting the right conferred upon the Registrar under the provisions of Section 96 of the Act to extend the time within which any Annual General Meeting may be held. Every Annual General Meeting shall be called for time during business hours, on a day that is not a public holiday and shall be held at the Registered Office of the Company or at some other place as the Board may determine and the Notice calling the Meeting shall specify it as the Annual General Meeting. The Company may by a resolution passed at in any one Annual General Meeting fix the time for its subsequent Annual General Meetings. Every member of the Company shall be entitled to attend in person or by proxy or through the duly authorized representative and the Auditor of the Company shall have the right to attend and to be heard at any General Meeting which he attends on any part of the business which concerns him as Auditor at every Annual General Meeting of the Company there shall be laid on the table the Board's Report and Auditor's statement of Accounts and the Auditor's Report. The Board shall prepare the annual list of Members, Income and Expenditure Account and Balance Sheet and forward the same to the Registrar of Companies in accordance with Sections 92 and 137 of the Act.

Extraordinary General Meeting

16. The Board may, whenever it thinks fit, call an Extraordinary General Meeting and it shall do so upon a requisition in writing by any members having, on the date of such requisition not less than one tenth of the total voting power of all the members having the right of voting in regard to the matter in respect of which the requisition has been made.



Requisition of members to state objects of meeting

17. Any requisition so, made by members must state the object or objects of the meeting proposed to be called, and must be signed by the requisitionists and be deposited at the Company's Registered Office, provided that such requisition may consist of several documents in like form, each signed by one or more requisitionists.

On receipt of requisition Board to call meeting and on default requisitionists may do so

18. Upon the receipt of any such requisition, the Board shall forthwith call an Extraordinary General Meeting, and if they do not proceed within twenty one days from the date of the requisition being deposited at the Office, to cause a meeting to be called on a day not later than 45 days from the date of deposit of the requisition, the requisitionists, or such of their number as represent not less than one tenth of the voting power mentioned in Article 37 and referred to in section 100 of the Act, may themselves call the meeting, but any meeting so called shall be held within three months, from the date of the delivery of the requisition as aforesaid.

Meeting called by requisitionists

19. Any meeting called under the foregoing Articles by the requisitionists shall be called in the same manner, as early as possible, in which meetings are to be called by the Board.

Twenty One days notice of meeting

20. Clear Twenty One days notice at least of every General Meeting, Annual or Extraordinary, and by whomsoever called, specifying the day, place and hour of meeting, and the general nature of the business to be transacted thereat, shall be given, in the manner hereinafter provided, to such persons as are under these Articles entitled to receive notice from the Company. Provided that in case of an Annual General Meeting, with the consent in writing of all the members entitled to vote thereat and in the case of any other meeting, with the consent of members having not less than 95 percent of the right to vote at the meeting, a meeting may be convened by a shorter notice. In the case of an Annual General Meeting, if any business is to be transacted other than (i) the consideration of the Accounts, balance sheets and reports of the Board of Directors and Auditors, (ii) the appointment and of the fixing the remuneration of the Auditors, and in the case of any other meeting in any event, there shall be annexed to the notice of the meeting a statement setting out all material facts concerning each such item of business; including in particular the nature and extent of the interest, if any, therein of every member of the Board. The provisions of Sections 101 to 110 of the Act shall not apply with respect to General Meeting (including an Annual General Meeting) of the Company.

Omission to give notice not to invalidate a resolution passed



21. The accidental omission to give any such notice as aforesaid to any of the members or the non-receipt thereof shall not invalidate any resolution passed at any such meeting.

Notice of Business

22. No General Meeting, Annual or Extraordinary shall be competent to enter upon, discuss or transact any business, which has not been mentioned in the notice, or notices upon which it was convened.

Notice to be signed

23. Every notice of an Annual or Extraordinary General Meeting shall be signed by the Secretary, any of the Director or by such other officer as the Board may appoint, except in case of a meeting convened by members in accordance with these Articles, in which case the notice may be signed by the members convening the same.

Quorum at General Meeting

24. Two members present in person shall be a quorum for a General Meeting.

Business not to commence till quorum is present

25. No business shall be transacted at any General Meeting unless the quorum requisite shall be present at the commencement of the business.

If quorum not present meeting to be dissolved or adjourned

26. If, after the expiration of half an hour from the time appointed for holding a meeting of the Company, a quorum shall not be present, the meeting if convened by or upon the requisition of Members, shall stand dissolved, but in any other case the meeting shall stand adjourned to the same day in the next week or if that day is a public holiday until the next succeeding day which is not a public holiday at the same time and place, or to such other day and at such other time and place in as the Board may determine. In case of any change in day, time or place of the adjourned meeting, the Company shall give not less than three days notice to the members individually or by publishing an advertisement in the newspapers (One in English and one vernacular language) which is in circulation at the place where the Registered Office of the Company is situated. If at the adjourned meeting also, quorum is not present, at the expiration of half an hour from time to time appointed for holding the meeting, the members present shall constitute a quorum, and may transact the business for which the meeting was called.

Chairman of General Meeting



27. The Chairman shall be entitled to take the chair at every General Meeting of the Company, whether Annual General Meeting or Extraordinary General Meeting. If there be no such Chairman or if at any meeting he is not present or if present is unwilling to take the Chair, the Vice Chairman, if present and willing, shall take the Chair. In the absence of both the Chairman and the Vice-Chairman, the members of the Board present shall elect one of their members to act as the Chairman. If there be no member of the Board willing to take the Chair, the members present shall elect one of their members to be the Chairman.

Business confined to election of Chairman whilst the Chair is vacant

28. No business shall be deliberated at any General Meeting except the election of a Chairman, whilst the Chair is vacant.

Chairman with consent may, adjourn meeting

29. In case of adjourned meetings:
- (i) The Chairperson may, with the consent of any meeting at which a quorum is present, and shall, if so directed by the meeting, adjourn the meeting from time to time and from place to place.
 - (ii) No business shall be transacted at any adjourned meeting other than the business left unfinished at the meeting from which the adjournment took place;
 - (iii) When a meeting is adjourned for thirty days or more, notice of the adjourned meeting shall be given as in the case of an original meeting.
 - (iv) Save as aforesaid, and as provided in section 103 of the Act, it shall not be necessary to give any notice of an adjournment or of the business to be transacted at an adjourned meeting.

Questions at General meeting how decided

30. At any General Meeting a resolution put to the vote shall be decided on a show of hands unless a poll is (before or on the declaration of the result of the show of hands) ordered to be taken by the Chairman of the meeting on his own motion or made on demand by at least two members having a right to vote on the resolution and present in person or by proxy or by the Chairman of the meeting or by any member or members holding not less than one-tenth of the total voting power in respect of the resolution and, unless a poll is so demanded, a declaration by the Chairman that a resolution has on a show of hands, been carried or carried unanimously, or by a particular majority, or lost, and an entry to that effect in the Minute Book of the Company shall be conclusive evidence of the fact, without proof of the number or proportion of the votes recorded in favors of or against that resolution.

Chairman's casting vote



31. Every question submitted to a Meeting shall be decided in the first instance by a show of hands and in the case of an equality of votes the Chairman shall, both on a show of hands and at a poll (if any), have a casting vote in addition to the vote to which he is entitled as a member.

Poll to be taken, if demanded

32. Subject to the provisions of Article 34, if a poll is ordered or demanded as aforesaid, the same shall, subject to the provisions of these Articles, be taken at such time (not later than 48 hours from the time when the demand was made) and place as the Chairman shall decide and either at once or after an interval or adjournment or otherwise, and the result of the poll shall be deemed to be the resolution of the meeting at which the poll was demanded. The demand for a poll may be withdrawn at any time by the person or persons who made the demand.

Scrutineers at poll

33. Where a poll is to be taken, the Chairman of the meeting shall appoint such number of scrutineers, as he deems necessary, to scrutinize the votes given on the poll and to report thereon to him. One of the scrutineers so appointed shall always be a Member (not being an officer or employee of the Company) present at the meeting provided such a member is available and willing to be appointed. The Chairman shall have power at any time before the result of the poll is declared to remove a scrutineer from office and fill vacancies in the office of scrutineer arising from such removal or from any other cause.

In what case poll taken without adjournment

34. Any poll duly demanded on the election of a Chairman of a meeting or on any question of adjournment shall be taken at the meeting forthwith.

Demand for poll not to prevent transaction of other business.

35. The demand for a poll, except on the question of the election of the Chairman and of an adjournment, shall not prevent the continuance of a meeting for the transaction of any business other than the question on which the poll has been demanded.

MINUTES

Minutes of General Meeting

36. The Company shall maintain the minutes of all proceedings of every General Meeting in the manner:



- (i) The Company shall cause the minutes to be kept by making, within 30 days of the conclusion of every such meeting concerned, entries thereof in books kept for the purpose with their pages consecutively numbered.
- (ii) Each page of every such book shall be initialed or signed and the last page of the record of proceedings of each meeting in such book shall be dated and signed by the Chairman of the meeting within the aforesaid period of 30 days or in the event of the death or inability of that Chairman within that period, by a member of the Board duly authorized by the Board for the purpose.
- (iii) In no case the Minutes of proceedings of a meeting shall be attached to any such book as aforesaid by pasting or otherwise.
- (iv) The minutes shall state the name of the Company, day, date and venue, time of commencement and conclusion of the meeting.
- (v) Minutes shall also state in alphabetical order or in any other logical manner, but in either case starting with the name of Chairperson, names of Director, invitees and the Company Secretary present at the meeting.
- (vi) The minutes of each meeting shall contain a fair and correct summary of the proceedings thereat.
- (vii) All appointments of Officers made at any of the meetings aforesaid shall be included in the minutes of the meeting.
- (viii) Nothing herein contained shall require or be deemed to require the inclusion in any such minutes of any matter which in the opinion of the Chairman of the meeting (a) is, or could reasonably be regarded as, defamatory of any person, or (b) is irrelevant or immaterial to the proceedings, or (c) is detrimental to the interest of the Company. The Chairman of the meeting shall exercise an absolute discretion in regard to the inclusion or non-inclusion of any matter in the minutes on the aforesaid grounds.
- (ix) Any such minutes shall be evidence of the proceedings recorded therein.
- (x) The book containing the minutes of proceedings of General Meeting shall be kept at the Registered office of the Company and shall be open, during business hours, for such periods, not being less in the aggregate than two hours in each day as the Board may determine, to the inspection of any member without charge.

Voting Rights

- 37. (i) Unless disqualified by any of the provision of these Articles or by the Act, a member shall be entitled to vote at every General Meeting on a show of hands, and upon a poll every such member present in person and entitled to vote shall have one vote. Every member shall have one vote.

Chairman of any meeting to be judge of validity of any vote

- (ii) The Chairman of any meeting shall be the sole judge of the validity of every vote tendered at such meeting. The Chairman present at the taking of a poll shall be the sole judge of the validity of every vote tendered at such poll.



BOARD OF DIRECTORS

38. Unless otherwise determined by a General Meeting, the number of the members of the Board shall not be less than 2(three) and not more than 15(Fifteen) or such number as may be stipulated by the Act for the time being in force. The Company may appoint more than 15 (fifteen) directors after passing a special resolution in General Meeting.

The first Board shall comprise of three Members as under:

- (i) VINEET GUPTA;
- (ii) ASHISH GUPTA and
- (iii) MOHIT THUKRAL

Appointment of Chairman, Vice-Chairman and Additional Directors

39. The Board of Directors shall from time to time appoint amongst their members the Chairman and Vice-Chairman and determine the period for which each of them shall hold office. The Board shall have powers from time to time appoint additional members on the Board.

Member of the Board to be a member of the Company

40. A person shall not be eligible to be a member of the Board unless he is a member of this Company or is a Director or Employee of the Company or body corporate which is a member of this Company.

Appointment of member of the Board to be voted on individually

41. At a General Meeting a motion shall not be made for the appointment of two or more persons as members of the Board by a single resolution, unless a resolution that it shall be so made has first been agreed to by the meeting without any vote being given against it. A resolution moved in contravention of this Article shall be void whether or not objection was taken at the time to its being so moved.

Casual Vacancy to be filled by the Board

42. Any casual vacancy occurring among the member of the Board may subject to the provisions of Section 161 and 169 of the Act be filled by the Board but any person so appointment shall hold office only until the date upto which the member of the Board in whose place he is appointed would have held office if it had not been vacated.

Vacation of the office by a member of the Board



43. A member of the Board shall ipso facto cease to be a Member of the Board if he vacates office by reason of any of the provisions of Section 167 or is removed under the provisions of Section 169 of the Act.

Member of the Board may enter into contract

44. Subject as provided in the Memorandum of Association and/or in the Act (and particularly in Sections 184, 188, 189 and 190 thereof) any member of the Board, and any of his Company in which he is interested may enter into any contract with the Company for the sale, purchase or supply of goods, the rendering of services or otherwise, without such member of the Board being disqualified, or incurring any liability to account for profits.
45. (i) A minimum of four meetings of the Board shall be held in every year in such a manner that not less than one hundred and twenty days shall intervene between two consecutive meetings of the Board.
- (ii) Subject as aforesaid the Board may meet together for the dispatch of business, adjourn and otherwise regulate its meetings and proceedings as it thinks fit.

NOTICE OF MEETINGS

46. A meeting of the Board shall be called by giving not less than seven days notice in writing to every Director at his address registered with the Company and such notice shall be sent by hand delivery or by post or by electronic means.
47. Subject to Section 174 of the Act, the quorum for a meeting of the Board shall be either two directors or 1/3 of its total strength whichever is higher (any fraction contained in that 1/3* being rounded off as one). The participation of the Directors by video conferencing or by other audio visual means shall also be counted for the purposes of quorum. Provided further that where at any time the number of interested directors of the Board exceeds or is equal to 2/3* of the total strength, the number of the remaining members of the Board, that is to say, the number of members of the Board, who are not interested present at the meeting and being not less than two shall be quorum during such time.

When meeting to be convened

48. The Secretary may at any time convene a meeting of the Board and shall so do on being so requested by any member of the Board.

Questions at Board Meeting how decided



49. Questions arising in any meeting of the Board shall be decided by a majority of votes and in the case of an equality of votes the Chairman shall have a second or a casting vote.

Chairman of the meeting of the Board

50. The Chairman shall be entitled to preside over every meeting of the Board. If at any meeting of the Board, the Chairman is not present within fifteen minutes after the time appointed for holding the same, the Vice-Chairman if present, shall preside over the meeting. If at any meeting, the Chairman and the Vice-Chairman be not present, the members of the Board present may choose one of their members to be the Chairman of the meeting.

Board may appoint sub-Committee

51. The Board may, subject to the provisions of the Act, delegate any of its powers to, or appoint for any special purposes, sub-committees consisting of such members of the Board as it think fit. Any sub-committee so formed shall conform to any regulations that may from time to time be imposed upon it by the Board. The meetings and proceedings of any sub-committee shall be governed by the provisions herein contained for regulating the meetings and proceedings of the Board so far as the same are applicable thereto and are not superseded by any regulations made by the Board.

Resolution by circulation

52. Subject to compliance with Section 175 of the Act, a resolution in writing signed by all the members of a Board for the time being in India (except as provided in Section 179 of the Act) be as valid and effectual as if it had been passed at a meeting of the Board duly called and constituted.

Acts of Boards and sub-committees valid notwithstanding informal appointment

53. All acts done by any meeting of the Board, or by any sub-committee appointed under Article 51 or by, any person acting as a member of the Board, shall notwithstanding that there was some defect in the appointment of any Member of the Board or person acting as aforesaid or that they or any of them were disqualified, be as valid as if every such person had been duly appointed and was qualified to be a member of the Board.

Minutes of proceedings of meeting of the Board

54. The Company shall maintain the proceedings of every meeting of the Board in the manner:
- (i) The Board shall cause minutes of all proceedings of every meeting of the Board and of every sub-committee thereof to be kept by making within fifteen days from the date of the conclusion of the Meeting of the Board or the sub-Committee, the draft Minutes thereof shall be circulated by hand or by speed post or by registered post or by courier or by e-mail or by any other recognised electronic means to all the members of the Board or the Committee for their comments.



- (ii) Minutes shall be entered in the Minutes Book within thirty days from the date of conclusion of the Meeting.
- (iii) Pages of the minutes shall be consecutively numbered. In the event any page or part thereof in the Minutes Book is left blank, it shall be scored out and initialled by the Chairman who signs the Minutes.
- (iv) Minutes of the Meeting of the Board shall be signed and dated by the Chairman of the Meeting or by the Chairman of the next Meeting.
- (v) Each page of every such book shall be initialed or signed and the last page of the record of proceedings of each meeting in such book shall be dated and signed by the Chairman of the said meeting or the Chairman of the next succeeding meeting.
- (vi) In no case the minutes of a meeting shall be attached to any such books as aforesaid by passing or otherwise.
- (vii) Minutes shall state, at the beginning the serial number and type of the Meeting, name of the company, day, date, venue and time of commencement and conclusion of the Meeting.
- (viii) Minutes shall record the names of the Directors present physically or through Electronic Mode, the Company Secretary who is in attendance at the Meeting and Invitees, if any, including Invitees for specific items.
- (ix) All appointments of Directors, key managerial personnel and senior management made at any of the meetings aforesaid shall be included in the minutes of meeting.
- (x) The Minutes shall also contain:
 - a) the names of the members of the Board and invitees present at the meeting; and
 - b) in the case of each resolution passed at the meeting, the names of the members of the Board, in any dissenting from, or not concurring, in the resolution.
- (xi) Nothing contained in the sub-clause (i) to (x) shall be deemed to require the inclusion in any such minutes of any matter which, in the opinion of the Chairman of the Meeting:
 - a) is, or could reasonably be regarded as, defamatory of any person;
 - b) is irrelevant or immaterial to the proceedings, or
 - c) is detrimental to the interests of the Company.
- (xii) The Chairman shall exercise an absolute discretion in regard to the inclusion or non-inclusion of any matter in the minutes on the grounds specified in this sub-clause.
- (xiii) Minutes of meeting kept in accordance with the aforesaid provisions shall be evidence of the proceedings recorded therein.

REGISTERS

Register of Members of the Board

55. The Board shall cause to be kept at the Registered Office of the Company a Register containing the particulars of then members of the Board, Key Managerial Personnel and other persons as mentioned under the Act and shall otherwise comply with the provisions of the Act in all respects.



56. Every member of the Board shall disclose to the Company the particulars relating to his office in any other body corporate which are required to be specified under sub-section (1) of Section 170 of the Act.

POWERS OF THE BOARD

Powers of the Board

57. The Board may exercise all such powers of the Company and do all such acts and things which are not by the Act or other Act or by the Memorandum or by the Articles of the Association required to be exercised by the Company in General Meeting, subject nevertheless to these Articles, to the provisions of the Act, or any other Act and to such regulations, being not inconsistent with the aforesaid regulations or provisions, as may be prescribed by the Company in General Meeting but no regulation made by the Company in General Meeting shall invalidate any prior act of the Board, which would have been valid if that regulation had not been made.

Co-option of Board members

(i) Subject to the provisions of Article 39, the Board shall have powers to appoint one or more members to the Board as Additional Directors provided that such Co-opted member/Members shall hold office only upto the date of the next Annual General Meeting of the Company.

Alternate Directors

(ii) The Board shall be entitled to appoint any person as an alternate for any member of the Board who is likely to be away from the state in which the meetings of the Board are normally held. Such alternate member shall vacate office when the member of the Board for whom he acts as an alternate returns to the state in which meetings of the Board are normally held.

Other powers of the Board

58. Without prejudice to the general powers conferred by the last preceding Article and the other powers conferred by these presents, it is hereby expressly declared that the Board shall have the following powers, that is to say, power;

- (i) To pay the costs, charges and expenses preliminary and incidental to the promotion, formation, establishment or/and registration of the Company.
- (ii) (a) To purchase or otherwise acquire for the Company, any property rights or privileges, movable or immovable, of whatever nature which the Company is authorized to purchase or acquire for such price and on such terms and conditions as they think fit.
(b) To sell, lease or otherwise dispose of any portion, not being the whole or substantially the whole of the property of the Company as may be thought desirable.



- (iii) Subject as provided in Article 12, to borrow or raise money which may be required for the purpose of the Company upon Bonds, Bills of Exchange, Promissory Notes or other Obligations, or security of the Company, or by mortgage or charge of the property of the Company.
- (iv) As their discretion to pay for any property rights or privileges acquired by, or services rendered to the Company either wholly or partially in cash or in bonds or other securities of the Company, and any such bonds or other securities of the Company and any such bonds or other securities may be either specifically charged upon all or any part of the property of the Company or not so charged.
- (v) To secure the fulfillment of any contracts or engagements entered into by the Company by mortgage or charge of all or any part of the property of the Company or in such other manner as they may think fit.
- (vi) To appoint and at their discretion, remove or suspend such Managers, Secretaries, Officers, Clerks, Agents and Servants for permanent or temporary or special services as they may from time to time think fit and to determine their powers and duties, and fix their salaries or emoluments and to require security in such instances for such amount as they think fit.
- (vii) To appoint any person or persons to accept and hold in trust for the Company any property or any special funds or emoluments belonging to the Company or in which it is interested or for any other purposes and to execute and do all such deeds, documents and things as may be requisite in relation to any such trust.
- (viii) To Institute, conduct, defend, compound or abandon any legal proceedings by or against the Company or otherwise concerning the affairs of the Company; and also except in the case of a member to compound and allow time for payment or satisfaction of any debts due, and of any claims in demands by or against the Company.
- (ix) To refer any claims or demands by or against the Company to arbitration and observe and perform the awards.
- (x) To make and give receipts, releases and other discharges for money payable to the Company and for the claims and demands of the Company.
- (xi) To determine who shall be entitled to sign on behalf of the Company bills, notes, receipts, acceptances, endorsements, cheques, leases, contracts and documents.
- (xii) To invest and deal with any of the moneys of the Company not immediately required in such securities and in such manner as the Board may think fit and from time to time vary or realize such investments, and in particular without prejudice to the aid generality, to place such money on deposit with any Bank or Banks subject to the proviso that Capital Funds of the Company shall not be allowed to remain on such deposit for a longer period than twelve months.
- (xiii) To set aside any funds of the Company for the purpose of creating any Building or Other Special Fund and to accumulate the income arising there from and from time to time to apply the securities or money to the credit of such Funds towards the objects for which such funds was created.
- (xiv) From time to time to make, vary and repeal such regulations or bye-laws, as they may consider expedient, for the management of the Company and the affairs thereof and as to the duties of any officers or other servants of the Company, and as to the conduct of business by the Members of the Board of any sub-Committee thereof, or as to any of the matters or things within the power or under the control of the Board, provided that the same shall not be inconsistent with the Memorandum and Articles of Association.



- (xv) To enter into all such negotiations and contracts and rescind and vary all such contracts, for the purpose of the Company.

THE SEAL

59. (i) The Board shall provide for the safe custody of the seal.

(ii) The seal of the company shall not be affixed to any instrument except by the authority of a resolution of the Board or of a committee of the Board authorised by it in that behalf, and except in the presence of at least two directors and of the secretary or such other person as the Board may appoint for the purpose; and those two directors and the secretary or other person aforesaid shall sign every instrument to which the seal of the company is so affixed in their presence.

Deeds how executed

60. Every deed or other instrument to which the Seal of the Company is required to be affixed shall, unless the same is executed by a duly constituted attorney, be signed by the Directors or the Secretary or some other person appointed by the Board for the purpose.

BOOKS AND DOCUMENTS

Book of accounts, etc., to be kept by the Company

61. The Board shall keep at the Office or at such other place in India as the Board thinks fit, proper books of account in accordance with Section 128 of the Act with respect to:

- (i) All sums of money received and expended by the Company and the matters in respect of which the receipts and expenditure take place;
- (ii) All sales and purchases of goods by the Company;
- (iii) The assets and liabilities of the Company;

Where the Board decides to keep all or any of the Books of account at any place other than the office of the Company, the Company shall within seven days of the decision file with the Registrar a notice in writing giving the full address of that other place.

The Company shall preserve in good order the books of account relating to a period of not less than eight years preceding the current year.

When the Company has a Branch Office, whether in or outside India, the Company shall be deemed to have complied with this Article if proper Books of Account relating to the transactions effected at the branch office and proper summarized returns made up to date at intervals of not more than three months, are sent by the branch office to the Company at its Registered Office or other place in India at which the Company's Books of Account are kept as aforesaid.

The Books of Account shall give a true and fair view of the state of the affairs of the Company or branch office, as the case may be, and explain its transactions and shall be open to inspection by any



member of the Board during business hours and by any member of the Company in accordance with clause II of the Memorandum of Association.

ACCOUNTS AND BALANCE SHEETS

Statement of accounts to be furnished to General Meeting

62. The Board shall from time to time in accordance with Sections 129 and 134 of the Act, cause to be prepared and to be laid before the Company in General Meeting, such Balance Sheets, Income and Expenditure Accounts and Reports as are required by those Sections.

Copies shall be sent to each Member

63. A copy of every such Income and Expenditure Account and Accounts Balance Sheet (including the Auditor's Report and every other documents required by law to be annexed or attached to each to the Balance Sheet) shall at least clear twenty one days before the meeting at which the same are to be laid, be sent to all members of the Company, and to all persons entitled to receive notices of General Meetings of the Company.

AUDIT

Accounts to be audited

64. Auditors shall be appointed and their rights and duties be regulated in accordance with Sections 139 to 148 of the Act.

Accounts when Audited and approved to be conclusive

65. Every Account of the Company when audited and approved by the Members at a General Meeting shall be conclusive.

DOCUMENTS AND NOTICES

Service of documents or notices on Members by Company

66. (i) A document or notice may be served or given by the Company on any member either personally or by sending it by post to him to his Registered address or (if he has no registered address in India) to the address, if any, in India supplied by him to the Company or electronically via e-mail, for serving documents or notices on him.



(ii) Where a document or notice is sent by post, service of the document or notice shall be deemed to be effected by properly addressing, repaying and posting letter containing the document or notice, provided that where a member has intimated to the Company in advance that documents and notices should be sent to him under a certificate of posting or by registered post with or without acknowledgement due and has deposited with the Company a sum sufficient to defray the expenses for doing so, service of the document or notice shall not be deemed to be effected unless it is sent in the manner intimated by the member and such service shall be deemed to have been effected in the case of a notice of a meeting at the expiry of forty-eight hours after the letter containing the document or notice is posted and in any other case, at the time at which the letter should be delivered in the ordinary course of post.

Advertisement

67. Document or notice advertised in a newspaper circulating in India shall be deemed to be duly served or sent on the day on which the advertisement appears on or to every member who has not registered address in India and has not supplied to the Company an address within India for serving of documents on of the sending of notices to him.

On whom documents or notice must be served.

68. Documents or notices of every General Meeting shall be served or given in the same manner herein before authorized on or to every member of the Company entitled to receive notice of General Meeting except those members who (having no registered address within India) have not supplied to the Company an address within India for the giving of notice to them and also to the auditor or auditors for the time being of the Company.

Documents of notice how to be signed

69. Any document or notice to be served or given by the Company may be signed by the Secretary or by some person duly authorised by the Board for such purpose and the signature thereto may be written, printed or lithographed.

Service of document or notice by Member

70. All documents or notices to be served or given by the members on or to the Company or any office thereof shall be served or given by sending it to the Company or officer at the Office by post under a certificate of posting or by registered post, or by leaving it at the Registered Office.

INDEMNITY

Right to Indemnity

19






71. Subject to the provisions of the Act, every member or the Board or a sub-committee thereof Manager and other Officer or Servant of the Company and any person employed by the Company as Auditor shall be indemnified by the Company against and it shall be the duty of the Board out of the funds of the Company pay, all costs, losses and expenses which any such persons may incur or become liable for (otherwise, save as mentioned in the Act, through any negligence, default, misfeasance, breach of duty or breach of trust on his part) by reason of any contract entered into, or act or thing done by him in any way in the discharge of his duties, including traveling expenses, and in particular and so as not to limit the generality of the foregoing provisions against all liabilities incurred by him as such member of the Board or a subcommittee thereof, Manager, Officer or Servant, or Auditor in defending any proceedings; whether civil or criminal in which judgment is given in his favour or in which he is acquitted, or in connection with any application under Section 34 of the Act in which relief is granted to him by the Court.

Member of the Board, not responsible for acts of others

72. Subject to the provisions of the Act, the member of the Board or a sub-Committee thereof, Manager, or other Officer of the Company or any person employed as an Auditor shall be liable (otherwise save as mentioned in the Act, than through any negligence default, misfeasance, breach of duty or breach of trust on his part) for the acts, receipts, neglects or defaults or any other member or members of the sub-Committee, or Officers or for any loss or expense happening to the Company through the insufficiency or deficiency of title to any property acquired by order of the Board of Directors for on behalf of the Company or for the insufficiency or deficiency of any security in or upon which any of the moneys of the Company shall be invested, or for any loss or damage arising from the bankruptcy, insolvency or tortuous act of any person with whom any moneys, securities or effects shall be deposited, or for any loss occasioned by any error of judgment or for any other loss, damage or misfortune whatever which shall happen in the execution of the duties of his office, or in relation thereto.



| S. No. | Name, Addresses, Description and occupation of each subscriber | Photo and Signature of subscribers | Name, Addresses, Description and signatures of witnesses |
|--------|---|--|--|
| 1. | VINEET GUPTA S/O JAI DEV GUPTA ADDRESS: A-130, 2 nd FLOOR NEW FRIENDS COLONY, NEW DELHI-110065. OCCUPATION: BUSINESSMAN |  | All the subscribers have signed in my presence. DEEPANSHI SINDHWANI, D/O SH. SURENDRA KUMAR SINDHWANI R/O 361, 2 nd FLOOR, PARMANAND COLONY, NEAR MUKHERJEE NAGAR, NEW DELHI - 110009. PRACTICING ASSOCIATE COMPANY SECRETARY, M-NO. 41773 COP NO. 16355 |
| 2. | ASHISH GUPTA S/O MADAN GOPAL GUPTA ADDRESS: 14/903, HERITAGE CITY, MG ROAD, GURGAON- -122002. OCCUPATION: CONSULTANT. |  | |
| 3. | MOHIT THUKRAL S/O MADAN THUKRAL ADDRESS: 33, SILVER OAKS AVENUE, DLF PHASE-I, GURGAON- 122002. OCCUPATION: SERVICEMAN |  | |

Place: NEW DELHI

Dated the 20th day of DECEMBER, '2016

21




VINEET GUPTA



I witness to the subscriber, further, I have verified his identity details for the identification and satisfied myself of his identification as filled in.

Place: New Delhi

Name: Deepanshi Sindhwani

Date: December 20' 2016

M. no.: A 41773 (ICSI)

COP no.: 16355



MOHIT THOKRAK.



I, witness to the subscriber. Further, I have verified his identity details for the identification and satisfied myself of his identification as filled in.

Deepanshi

Place: New Delhi

Name: Deepanshi Sindhwani

Date: December 20 '2016

M. no.: A41773

(ICSI)

COP no: 16355



ASHISH GUPTA



I, witness to the subscriber. Further, I have verified his identity details for the identification and satisfied myself of his identification as filled in.

Place: New Delhi

Date: December 20 2016

Deepanshi

Name: Deepanshi Sindhwani

M. no.: A41773 (CICSI)

COP no.: 16355

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Government of Punjab
Department of Higher Education
(Education-1 Branch)

To

Director,
Development & Operations,
Reimagining Higher Education Foundation.
Registered office: 302, Gopal Heights,
Netaji Subhash Place, New Delhi-110034.

Memo No: 8/11/2019-3Edu1(4Edu1)/6701

Dated, Chandigarh: 28/12/21

Subject: - **Regarding establishment of Plaksha University Punjab, Block-B, Sector-101 Alpha, IT City, SAS Nagar (Mohali), Punjab.**

In continuation to this office memo no. 8/11/2019-3Edu1(4Edu1)/2139 dated 26.10.2021 on the subject cited above.

2. It is informed that the Plaksha University Punjab Act-2021 (Punjab Act No. 21 of 2021) has been published in the Legislative Supplement (Extraordinary) of Punjab Government Gazette vide notification dated 9th Decmenber, 2021 issued by the Department of Legal and Legislative Affairs, Punjab. The aforesaid Act may be downloaded free of charge from the official website www.punjab.gov.in. An attested copy of published Act is attached herewith for your information and necessary action.

(Krishan Kumar, IAS)
Secretary to Govt. of Punjab
Department of Higher Education





Punjab Government Gazette

EXTRAORDINARY

Published by Authority

CHANDIGARH, THURSDAY, DECEMBER 9, 2021
(AGRAHAYANA 18, 1943 SAKA)

LEGISLATIVE SUPPLEMENT

| | Contents | Pages |
|------------|---|-----------|
| Part - I | Acts | |
| | 1. The Plaksha University, Punjab Act, 2021. (Punjab Act No. 21 of 2021) | ..153-172 |
| | 2. The Lamrin Tech Skills University, Punjab Act, 2021. (Punjab Act No. 22 of 2021) | ..173-193 |
| Part - II | Ordinances | |
| | <i>Nil</i> | |
| Part - III | Delegated Legislation | |
| | <i>Nil</i> | |
| Part - IV | Correction Slips, Republications and Replacements | |
| | <i>Nil</i> | |

(clxi)



PART I

GOVERNMENT OF PUNJAB
DEPARTMENT OF LEGAL AND LEGISLATIVE AFFAIRS, PUNJAB
NOTIFICATION

The 9th December, 2021

No.24-Leg./2021.- The following Act of the Legislature of the State of Punjab received the assent of the Governor of Punjab on the 2nd day of December, 2021, is hereby published for general information:-

THE PLAKSHA UNIVERSITY, PUNJAB ACT, 2021
(Punjab Act No. 21 of 2021)

AN

ACT

to establish and incorporate a University in the State of Punjab to be known as the Plaksha University, Punjab for the purposes of making provisions for imparting instructions, teaching, education, research, training and related activities at all levels in the discipline of higher education including engineering, humanities, social sciences, life sciences, management, and to provide for the matters connected therewith and/ or incidental thereto;

Whereas the Reimagining Higher Education Foundation, registered under the provisions of the Companies Act, 2013 (Central Act No. 18 of 2013), made a proposal to the State Government for setting up a self-financing University in the State of Punjab on the basis of the Punjab Private Universities Policy, 2010, to make provisions for all the streams of higher education at all levels;

Whereas the State Government, after due consideration of the said proposal of the aforesaid Foundation has come to the conclusion that the aforesaid Foundation is capable of establishing and running the University and accordingly has accepted its proposal for the establishment of the said Private University;

AND whereas in the circumstances referred to above, it is deemed expedient to establish the Plaksha University, Punjab for the aforesaid purposes.

BE it enacted by the Legislature of the State of Punjab in the Seventy-second Year of the Republic of India as follows:-

- I. (1) This Act may be called the Plaksha University, Punjab Act, 2021.
(2) It shall be deemed to have come into force on and with effect from the 20th day of August, 2021.

Short title and commencement.



Definitions.

2. In this Act, unless the context otherwise requires,-
- (a) 'Academic Council' means the Academic Council of the University;
 - (b) 'authorities' means the authorities of the University;
 - (c) 'Board of Management' means the Board of Management of the University;
 - (d) 'Board of Studies' means a body to be constituted by the Governing Body;
 - (e) 'campuses' means a contiguous area within which the University is situated;
 - (f) 'Chairperson' means the Chairperson of the Foundation;
 - (g) 'Chancellor' means the Chancellor of the University;
 - (h) 'Chief Finance and Accounts Officer' means the Chief Finance and Accounts Officer of the University;
 - (i) 'Dean' means the Dean of the University;
 - (j) 'Finance Committee' means the Finance Committee of the University;
 - (k) 'Foundation' means the Reimagining Higher Education Foundation registered under the provisions of the Companies Act, 2013 (Central Act No. 18 of 2013);
 - (l) 'Governing Body' means the Governing Body of the University;
 - (m) 'institution' means any institution or college or academic centre (by whatever name it may be called) established, run, managed, recognized or constituted by the University, within the campus;
 - (n) 'prescribed' means prescribed by the statutes, ordinances and regulations;
 - (o) 'Registrar' means the Registrar of the University;
 - (p) 'State Government' means the Government of the State of Punjab;
 - (q) 'statutes', 'ordinances' and 'regulations' means statutes, ordinances and regulations of the University made under this Act;
 - (r) 'teacher' includes Professor, Associate Professor, Assistant Professor, and any such other person, who imparts instruction in the University or in any of its institutions and centres;



- (s) 'University' means the Plaksha University, Punjab established under section 3 of this Act;
- (t) 'Vice-Chancellor' means the Vice-Chancellor of the University; and
- (u) 'Visitor' means the Visitor of the University.
3. (1) There shall be established a private University by the name of the Plaksha University, Punjab in the State of Punjab. Establishment of the University.
- (2) The University shall be run and managed by the Foundation in accordance with the provisions of this Act.
- (3) The University shall be a body corporate by the name mentioned in sub-section (1) and shall have perpetual succession and a common seal. It shall have the power to acquire, lease, hold, mortgage and dispose of property, both moveable and immovable and to make contracts, and shall sue and be sued by the said name.
- (4) The Headquarter of the University shall be located at Block B, Sector 101 - Alpha, IT City, Sahibzada Ajit Singh Nagar, Punjab - 140306.
- (5) The University shall be self-financed and it shall not be entitled to receive any grant or other financial assistance from the State Government.
4. The objects of the University shall be, - Objects of the University.
- (i) to provide for instructions, teaching, education, research and training at all levels in disciplines of higher education including engineering, humanities, social sciences, life sciences, management, e-learning, and online education and training in any other stream and subject, as per the needs of the industry and the society in general, as may be deemed necessary by the University, as permissible under the State or Central law and with the approval of the concerned Regulatory Authority;
- (ii) to promote the academic aspirations of rural students;
- (iii) to undertake industry-oriented teaching, training and research extension programmes and to provide employable skills with a view to contribute to the development of the society;
- (iv) to provide for research, creation, advancement and dissemination of knowledge, wisdom and understanding;
- (v) to encourage and motivate leading industrial houses for setting up



at the campus their respective corporate institutes for academia-industry nexus;

- (vi) to disseminate knowledge so as to make it accessible to all strata of the society;
- (vii) to promote Punjabi studies, to provide for research in Punjabi language and literature and to undertake measures for the development of Punjabi language, literature and culture;
- (viii) to open study centers, campuses, centers within its jurisdiction in accordance with the prevailing regulations, with the approval of the State Government;
- (ix) to set up off-campus centres, off-shore campuses, study centres and zonal or regional centres as per the guidelines of the University Grants Commission or its equivalent Body so created by the Central Government, and with the approval of the State Government; and
- (x) to do all such things, as may be necessary or desirable in furtherance to the objects of the University.

Powers and functions of the University.

5. The University shall have the following powers and functions to be exercised and performed by it or through its officers and authorities, namely:-

- (i) to impart education and to provide for instructions in various branches of learning and to confer or grant, subject to such conditions as the University may determine, degrees, diplomas, certificates or other academic distinctions on the basis of examinations, evaluation or any other method of testing on persons and to withdraw any such degree, diploma, certificate or other academic distinctions for good and sufficient cause;
- (ii) to make provisions and adopt all measures, including adoption and updating of the curricula, in respect of starting courses of study, teaching, training, research, consultancy and granting recognition and affiliation relating to the courses through traditional as well as new innovative modes including online education modes;
- (iii) to organize and to undertake extra mural studies and extension services;
- (iv) to conduct examinations for granting or conferring Post Doctorate, Doctorate, Masters, Degrees, Diplomas and Certificates;


The Secretary
Punjab Government
Chandigarh



- (v) to provide for dual Degree, Diploma or Certificate vis-à-vis other Universities on reciprocal basis;
- (vi) to institute and confer honorary Degrees and other distinctions, as may be prescribed;
- (vii) to conduct e-learning and online education programmes, as may be determined by the University;
- (viii) to provide for equivalence of the degrees, diplomas and certificates of the students completing their courses partially or in full, from any other recognized University, Board or Council or any other competent authority;
- (ix) to institute and confer the designation of Professor, Associate Professor, Reader, Assistant Professor, Lecturer or any other equivalent designation, as may be required by the University in its campuses or its institutions and to appoint persons as such;
- (x) to create academic, administrative, ministerial, technical and other posts and to make appointments thereto;
- (xi) to appoint persons working in any other University or institutions or organizations having specific knowledge permanently or for a specified period;
- (xii) to co-operate, collaborate or associate with any other University or authority or institution in such manner and for such purpose as the University may determine;
- (xiii) to establish and maintain study centres, examination centres, information centres, schools, institutions, specialized laboratories or other units for research and instructions as may be determined by the University for furtherance of its objects within its campus;
- (xiv) to undertake research and consultancy and for that purpose to enter into such arrangements with other institutions or bodies as the University may deem necessary;
- (xv) to determine standards for admission into the University, which may include examination, evaluation or any other method of testing;
- (xvi) to prescribe the fee structure for various categories of students, in view of clause 8 of the Punjab Private Universities Policy, 2010;



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- (xvii) to demand and collect fees and other charges, as may be prescribed;
- (xviii) to supervise the residences of the students of the University and to make arrangements for the promotion of their health and general welfare;
- (xix) to make special arrangements in respect of female students, as the University may consider necessary and desirable;
- (xx) to regulate and enforce discipline among the employees and students of the University and take such disciplinary measures in this regard, as may be deemed necessary by the University;
- (xxi) to make arrangements for promoting the health and general welfare of the employees of the University;
- (xxii) to receive donations; and acquire, hold, manage and dispose of any moveable or immovable property;
- (xxiii) to borrow money for the purposes of the University, with the approval of the Foundation;
- (xxiv) to mortgage or hypothecate the property of the University with the approval of the Foundation;
- (xxv) to hold, manage and run the funds of the Foundation and the endowments created in favour of the University;
- (xxvi) to receive and to raise loans and advances for the University;
- (xxvii) to purchase, acquire and take on lease or mortgage any immovable or movable property and to sell, lease, mortgage, alienate and transfer any immovable or movable property belonging to or vested in the University;
- (xxviii) to receive grants from the University Grants Commission and other Central or State agencies;
- (xxix) to fix, determine and provide salaries, remunerations and honoraria to teachers and employees of the University in accordance with the norms specified by the University Grants Commission;
- (xxx) to do self-certification, which shall be exempted from obtaining any permission, approval, license, certificate, No Objection Certificate or authorization from the State Government or any

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(6) The Visitor may inform the Vice-Chancellor about the results of such inspection, scrutiny, investigation, survey or inquiry and the Vice-Chancellor shall communicate to the Governing Body the views of the Visitor along with such advice, as the Visitor may have tendered and the action to be taken on such advice.

(7) The Vice-Chancellor shall inform the Visitor about the action taken or proposed to be taken by the University with respect to the inspection, scrutiny, investigation, survey, inquiry, or any other such like thing, as the case may be.

(8) If the State Government considers it appropriate, in public interest, to make inspection, scrutiny, investigation, survey or inquiry, as the case may be, in respect of any matter relating to the University or its institutions, a reference shall be made by the State Government to the Vice-Chancellor, who shall cause such inspection, scrutiny, investigation, survey or inquiry to be made.

The
Chancellor

9. (1) The Chairperson or any distinguished person nominated by the Foundation shall be the Chancellor of the University and in the absence of the Visitor, the Chancellor shall preside over the convocation of the University.

(2) The Chancellor shall be the Chairman of the Governing Body and he or she shall approve all appointments, nominations, removals, suspensions and reinstatements of the employees and officers of the University on the recommendation of the Governing Body of the University.

(3) The Chancellor may amend or revoke any decision taken by any authority or officer of the University and may exercise his powers, to do all necessary things to facilitate the smooth functioning of the University on the recommendation of the Governing Body.

(4) The Chancellor shall have the power to perform all such other functions, as may be required to do in furtherance to the objects of the University and any matter incidental thereto and the decisions taken by the Chancellor shall be final and binding on all the concerned of the University.

(5) If, in the opinion of the Chancellor, any decision of any officer or authority of the University is beyond the powers conferred under this Act or the statutes or the ordinances or the regulations or is likely to be prejudicial to the interests of the University, the Chancellor shall ask such officer or authority to revise his or its decision within a period of fifteen days and in case the officer or authority refuses to revise such decision, wholly or partly, or fails to take any decision within a period of fifteen days, the decision of the Chancellor thereon shall be final.

Secretary
General Secretary
Chancellor



- (6) If, at any time, upon the representation made or otherwise, it appears to the Chancellor that the Vice-Chancellor or any other officer of the University,-
- (a) has made default in performing any duty imposed upon him under this Act or otherwise; or
 - (b) has acted in a manner prejudicial to the interests of the University; or
 - (c) is incapable of managing the affairs of the University, the Chancellor may, notwithstanding the fact that term of that officer has not expired by an order in writing and stating the reasons therein, require the Vice-Chancellor or the officer concerned to relinquish his or her office from such date, as may be specified in the order. The Vice-Chancellor or the officer concerned shall be deemed to have relinquished his office from the date so specified:

Provided that no such order shall be passed, unless the grounds on which such action is proposed to be taken are communicated to the Vice-Chancellor or to the officer concerned and he or she is given reasonable opportunity of being heard.

10. (1) The Vice-Chancellor shall be appointed by the Chancellor from amongst the panel of three persons recommended by the Governing Body. The Vice-Chancellor
- (2) No person shall be appointed as Vice-Chancellor, unless he or she possesses such qualifications, as are specified by the University Grants Commission or its equivalent body so created by the Central Government.
- (3) The Vice-Chancellor shall be the overall in-charge of the University who shall exercise general superintendence and control in the affairs of the University and shall execute the decisions of various authorities of the University.
- (4) In case of the absence of the Visitor and the Chancellor, the Vice-Chancellor shall preside over the convocation of the University.
- (5) The Vice-Chancellor shall exercise such powers and perform such functions, as may be prescribed.
11. (1) The Registrar shall be appointed by the Chancellor from amongst the panel of three persons recommended by the Governing Body. The Registrar
- (2) No person shall be appointed as Registrar, unless he or she possesses such qualifications as are specified by the University Grants Commission, or its equivalent body so created by the Central Government.



(3) The Registrar shall sign all contracts and authenticate all documents or records for and on behalf of the University.

(4) The Registrar shall be the Member-Secretary of the Governing Body, the Board of Management and the Academic Council but he or she shall not have the right to vote.

(5) The Registrar shall exercise such other powers and perform such other functions, as may be prescribed.

The Chief
Finance and
Accounts
Officer:

12. (1) The Chief Finance and Accounts Officer shall be appointed by the Chancellor in such manner, as may be prescribed.

(2) No person shall be qualified to be appointed as Chief Finance and Accounts Officer, unless he has passed the Chartered Accountancy Test conducted by the Institute of Chartered Accountants of India.

(3) The Chief Finance and Accounts Officer shall exercise such powers and perform such functions, as may be prescribed.

Other officers:

13. (1) The University may appoint such other officers, as it may deem necessary for its smooth functioning.

(2) The manner of appointment of such other officers of the University and their powers and functions shall be such, as may be prescribed.

Authorities of
the University:

14. The following shall be the authorities of the University, namely: -

- (i) the Governing Body;
- (ii) the Board of Management;
- (iii) the Academic Council;
- (iv) the Finance Committee; and
- (v) such other authorities as may be declared by the statutes to be the authorities of the University.

The Governing
Body:

15. (1) The Governing Body of the University shall consist of the following persons, namely: -

- (a) the Chancellor; : Chairman
- (b) the Vice-Chancellor; : Member
- (c) five persons nominated by the Foundation out : Members
of whom three shall be eminent educationists;



- (d) one expert of management or information technology from outside the University nominated by the Chancellor; : Member
- (e) one expert of finance nominated by the Chancellor; : Member
- (f) one eminent educationist nominated by the Secretary to Government of Punjab, Department of Higher Education in consultation with the Chancellor; and : Member
- (g) the Administrative Secretary to Government of Punjab, Department of Higher Education or his representative not below the rank of Joint Secretary. : Member

(2) The Governing Body shall be the supreme body of the University. It shall perform the following functions, namely: -

- (a) to provide general superintendence and to give directions for controlling the functioning of the University in accordance with the statutes, the ordinances and the regulations;
- (b) to review the decisions of other authorities of the University in case these are not in conformity with the provisions of the statutes, the ordinances and the regulations;
- (c) to approve the budget and annual report of the University;
- (d) to lay down the extensive policies to be followed by the University; and
- (e) to exercise such other powers, as may be prescribed by the statutes.

(3) The Governing Body shall meet at least twice in a calendar year.

(4) The quorum for meeting of the Governing Body shall be six.

16. (1) The Board of Management shall consist of the following members, namely: - The Board of Management.

- (a) the Chancellor; : Chairperson
- (b) the Vice-Chancellor; : Member



- (c) five members of the Foundation nominated by the Foundation; : Members
- (d) three persons who are not the members of the Foundation, nominated by the Foundation; : Members
- (e) two persons from amongst the teachers nominated by the Foundation; : Members
- (f) Director Higher Education, Punjab as representative of the State Government; and : Member
- (g) two teachers nominated by the Chancellor. : Members
- (2) The Board of Management shall exercise such powers and perform such functions, as may be prescribed.
- (3) The Board of Management shall meet at least twice in a calendar year.
- (4) The quorum for meeting of the Board of Management shall be seven.

The Academic Council.

17. (1) The Academic Council shall consist of the following members, namely: -
- (a) the Vice-Chancellor; : Chairperson
- (b) one eminent academician nominated by the State Government as its representative; and : Member
- (c) such other members, as may be prescribed. : Members

(2) The Academic Council shall be the principal academic body of the University and it shall, subject to the provisions of this Act, the statutes, the ordinances and the regulations, coordinate and exercise general supervision over the academic policies of the University.

(3) The quorum for meeting of the Academic Council shall be such, as may be prescribed.

The Finance Committee.

18. (1) The Finance Committee shall consist of the following members, namely: -
- (i) the Vice-Chancellor; : Chairperson
- (ii) the Dean Academic Affairs; : Member

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- (iii) the Registrar; : Member
- (iv) two persons nominated by the Foundation out of whom one shall be a Financial Expert; and : Members
- (v) the Chief Finance and Accounts Officer. : Member-Secretary

(2) The members nominated by the Foundation shall hold office for a period of two years.

19. (1) The Chief Accounts and Finance Officer shall get the annual budget of the University prepared along with the requisite documents and submit the same to the Finance Committee for its approval. The Chief Accounts and Finance Officer shall also get the accounts of the annual income and expenditure of the University prepared and shall get the same audited from the Chartered Accountant so appointed by the Finance Committee in this regard.

Functions of the Finance Committee.

(2) The budget approved by the Finance Committee along with the note with regard to the audit of income and expenditure of the University, referred to in sub-section (1), shall be placed before the Chancellor for its approval.

(3) The Finance Committee shall tender advice to the Chancellor on financial matters of the University.

20. The composition, constitution, powers and functions of authorities under clause (v) of section 14, shall be such, as may be prescribed.

Other authorities.

21. A person shall be disqualified for being a member of any of the authorities or bodies of the University, if he, -

Disqualification for membership of an authority or body.

- (i) is of unsound mind and stands so declared by a competent court; or
- (ii) is an un-discharged insolvent; or
- (iii) has been convicted of any offence involving moral turpitude; or
- (iv) has been punished for indulging in or promoting unfair practice in the conduct of any examination in any form and anywhere.

22. No act done, or proceedings taken, under this Act by any authority or other body of the University shall be invalid merely on the ground of, -

Acts or proceedings not to be invalidated due to vacancies.

- (a) any vacancy or defect in the constitution of the authority or body; or



- (vi) the procedure for arbitration in case of dispute between the University, officers, teachers, employees and students;
 - (vii) the conferment of honorary degrees;
 - (viii) the exemption of students from payment of tuition fee and for awarding them scholarships and fellowships;
 - (ix) the policy of admissions, including regulation of reservation of seats, keeping in view of clause 9 of the Punjab Private Universities Policy, 2010;
 - (x) the number of seats in different courses; and
 - (xi) all other matters for which statutes are required to be made under this Act.
- (4) After the approval of the Chancellor, the statutes of the University shall be submitted to the State Government for its approval.
- (5) The State Government shall consider the statutes submitted by the University and shall give its approval without or with such modifications, if any, as it may deem necessary and return the statutes to the University.
- (6) The University shall, with the approval of the Governing Body, communicate its concurrence to the statutes as approved by the State Government, and if it desires not to give effect to any or all of the modifications made by the State Government, it may give reasons thereof.
- (7) After the statutes are finally approved by the State Government, these shall be published in the Official Gazette of the University.
- (8) The statutes so made, shall not be amended without the approval of the State Government.
26. (1) The Governing Body may, from time to time, make ordinances or may amend, or repeal the same. Power to make ordinances.
- (2) Every ordinance or any amendment made therein or repeal thereof, shall require the approval of the Chancellor.
- (3) Subject to the provisions of this Act and the statutes, the ordinances may provide for the following matters, namely:-
- (i) the admission of students to the University and their enrolment as such;





- (ii) the courses of study to be laid down for the degrees, diplomas and certificates of the University;
 - (iii) the degrees, diplomas, certificates and other academic distinctions;
 - (iv) the fees to be charged for various courses, examinations, degrees and diplomas of the University;
 - (v) the conditions for the award of fellowships, scholarships, studentships, medals and prizes;
 - (vi) the conduct of examinations, including the terms of office, the manner of appointment and the duties of the examining bodies, examiners and moderators;
 - (vii) the conditions of hostel facilities for students in the University;
 - (viii) taking disciplinary action against the students of the University;
 - (ix) the creation, composition and function of any other body, which is considered necessary for improving the academic standard of the University;
 - (x) the manner of co-operation and collaboration with other Universities and institutions; and
 - (xi) all other matters which by this Act or the statutes made thereunder are required to be provided by the ordinances.
- (4) After the approval of the Chancellor, the ordinances of the University shall be submitted to the State Government for its approval.
- (5) The State Government shall consider the ordinances submitted by the University and shall give its approval without or with such modifications, if any, as it may deem necessary and return the same to the University.
- (6) The University shall, with the approval of the Governing Body, communicate its concurrence to the ordinances as approved by the State Government and if it desires not to give effect to any or all of the modifications made by the State Government, it may give reasons thereof.
- (7) After the ordinances are finally approved by the State Government, these shall be published in the Official Gazette of the University.
- (8) The ordinances so made, shall not be amended without the approval of the State Government.

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27. (1) The Governing Body may, from time to time, make regulations or may amend, or repeal the same. Power to make regulations.

(2) Every regulation or any amendment made therein or repeal thereof, shall require the approval of the Chancellor.

(3) After the approval of the Chancellor, the regulations of the University shall be submitted to the State Government for its approval.

(4) The State Government shall consider the regulations submitted by the University and shall give its approval without or with such modifications, if any, as it may deem necessary and forward the same to the University.

(5) The University shall, with the approval of the Governing Body, communicate its concurrence to the regulations as approved by the State Government and if it desires not to give effect to any or all of the modifications made by the State Government, it may give reasons thereof.

(6) After the regulations are finally approved by the State Government, these shall be published in the Official Gazette of the University.

(7) The regulations so made, shall not be amended without the approval of the State Government.

28. (1) The University shall be prohibited from conferring any Degrees, not recognized by the University Grants Commission or its equivalent body constituted by the Central Government. University to follow rules, regulations etc. of the regulating bodies.

(2) It shall be mandatory for the University to follow the University Grants Commission (Establishment and Maintenance of Standards in Private Universities) Regulations, 2003, or any other regulations made for private Universities by the University Grants Commission or any other regulatory bodies.

29. (1) The University shall have General Fund to which shall be credited, General Fund.

- (a) fees and other charges received by the University;
- (b) any income received from consultancy and other work undertaken by the University; and
- (c) funds and grants received from any source by the University for research projects from any Government and non-Government funding agencies.



- (2) The General Fund shall be utilized for the following purposes, namely:-
- (a) for the repayment of the debts, including interest charges thereto incurred by the University;
 - (b) for the upkeep of the assets of the University;
 - (c) for the payment of the cost of audit of the fund;
 - (d) for meeting the expenses of any suit or proceedings;
 - (e) for the payment of salaries and allowances of the officers and employees of the University and for the payment of any benefit to any such officer and employee;
 - (f) for the payment of travelling and other allowances of the members of the authorities, committee or Board of the University;
 - (g) for the payment of fellowships, scholarships, assistanceships and other awards to students belonging to economically weaker sections of the society or research associates or trainees, as the case may be, or to any student eligible for such awards;
 - (h) for the payment of any expenses incurred by the University;
 - (i) for acquisition of land or any kind of development work or likewise activities for the purpose of the University;
 - (j) for the payment of cost of capital and repayment of loans incurred by the Foundation for setting up and running the University and the investments made therefore;
 - (k) for the payment of charges and expenditure relating to the consultancy work undertaken by the University; and
 - (l) for the payment of any expenditure, salaries, taxes, liabilities by the Foundation for or on behalf of the University.
- Annual report. 30. The accounts of the income and expenditure of the University shall be audited by the Chartered Accountant of the University, and the same shall be submitted once in a year by the Chief Finance and Accounts Officer to the Governing Body for its approval.
- Examinations. 31. The University shall prepare and publish a semester-wise or annual, as the case may be, tentative Schedule of Examinations including various academic



activities to be conducted by the University in the beginning of each academic session, but not later than the 30th August in a Calendar year.

Explanation.- 'Schedule of Examinations' means the time table giving details about the time, day and date of the commencement of each paper which is part of the scheme of examinations including the details of practical examinations and viva –voce, if any.

32. (1) The University shall strive to declare the results of examinations conducted by it within a period of forty-five days from the last date of the examination of particular course but, in any case, not later than sixty days from the said date. Declaration of results.

(2) No examination or the result of an examination shall be held invalid only for the reason that the University has not followed the Schedule of Examinations.

33. The convocation of the University shall be held in every academic year for conferring degrees, diplomas, certificates or any other academic distinction or for any other purpose, in such manner, as may be prescribed. Convocation.

34. If any question arises with respect to the appointment or entitlement of any person, to be a member of any authority or other body of the University, the same shall be referred to the Chancellor, whose decision thereon shall be final and binding. Disputes concerning authorities and bodies.

35. If any difficulty arises in giving effect to any of the provisions of this Act, the State Government may, in consultation with the Chancellor, by an order published in the Official Gazette, make such provision, not inconsistent with the provisions of this Act, as it may deem necessary for removing such difficulty: Power to remove difficulties.

Provided that no such order shall be made under this section after the expiry of a period of two years from the date of commencement of this Act.

36. No suit or other legal proceedings shall lie against any officer or employee of the University for anything which is done in good faith or intended to be done in pursuance of the provisions of this Act, the statutes, the ordinances or the regulations. Protection of action taken in good faith.

37. Notwithstanding anything contained in this Act, the statutes, the ordinances or the regulations made thereunder, the Foundation may, subject to the availability of the funds, discharge all or any of the functions of the University for the purposes of carrying out the provisions of this Act, the statutes, the ordinances Transitory Provisions.



Repeal and
savings.

and the regulations and for that purpose, may exercise such powers and perform such duties, which by this Act or by such statutes, the ordinances and the regulations are to be exercised or performed by any authority or officer of the University, until such authority comes into existence or officer is appointed.

38. (1) The Plaksha University Ordinance, 2021 (Punjab Ordinance No. 2 of 2021), is hereby repealed.

(2) Notwithstanding such repeal, anything done or any action taken under the Ordinance referred to in sub-section (1), shall be deemed to have been done or taken under this Act.

S.K. AGGARWAL,
Principal Secretary to Government of Punjab,
Department of Legal and Legislative Affairs.

2460/12-2021/Pb. Govt. Press, S.A.S. Nagar

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Government of Punjab
Department of Higher Education
(Education-1 Branch)

To

Director,
Development & Operations,
Reimagining Higher Education Foundation.
Registered office: 302, Gopal Heights,
Netaji Subhash Place, New Delhi-110034.

Memo No: 8/11/2019-3Edu1(4Edu1)/ 2139

Dated, Chandigarh: 26.10.21

Subject: - **Regarding establishment of Plaksha University Punjab, Block-B, Sector-101 Alpha, IT City, SAS Nagar (Mohali), Punjab.**

With reference to this office letter no. 8/11/2019-3Edu1(4Edu1)/1901 dated 27.08.2021 on the subject cited above.

2. With reference to subject cited above, it is informed that the Plaksha University Punjab was established by promulgating an Ordinance No. 1 of 2021 by the State of Punjab and notification was issued on dated 20.08.2021 by the Department of Legal and Legislative Affairs, Punjab in this regard. Since the said Ordinance could not be converted into an Act of the State Legislature in the last session of the Punjab Vidhan Sabha, which was convened on 3.9.2021 and as per the advice of the Legal Remembrancer, this Ordinance shall cease to operate on the expiry of a period of six weeks from the re-assembly of the Punjab Vidhan Sabha.

3. Therefore, the Plaksha University Punjab, Second Ordinance-2021 (Ordinance No. 2 of 2021) has been promulgated by the State of Punjab and notification has been issued on dated 25.10.2021 by the Department of Legal and Legislative Affairs, Punjab in this regard. A copy of published Plaksha University Punjab, Second Ordinance-2021 is attached herewith for your information and necessary action.



(Paramjit Singh, IAS)
Special Secretary to Govt. of Punjab
Department of Higher Education



Punjab Government Gazette


EXTRAORDINARY

Published by Authority

CHANDIGARH, MONDAY, OCTOBER 25, 2021
(KARTIKA 3, 1943 SAKA)

LEGISLATIVE SUPPLEMENT

| | Contents | Pages |
|------------|---|-------|
| Part - I | Acts | |
| | <i>Nil</i> | |
| Part - II | Ordinances | |
| | 1. The Plaksha University, Punjab Second Ordinance, 2021. (Punjab Ordinance No. 2 of 2021) | 21-40 |
| | 2. The Lamrin Tech Skills University, Punjab Ordinance, 2021. (Punjab Ordinance No. 3 of 2021) | 41-61 |
| Part - III | Delegated Legislation | |
| | <i>Nil</i> | |
| Part - IV | Correction Slips, Republications and Replacements | |
| | <i>Nil</i> | |
| | _____ | |
| | (cxxxvii) | |


Superintendent
Punjab Civil Secretariat
Chandigarh





PART II

GOVERNMENT OF PUNJAB

DEPARTMENT OF LEGAL AND LEGISLATIVE AFFAIRS, PUNJAB

NOTIFICATION

The 25th October, 2021

No. 22-Leg./2021.-The following Ordinance of the Governor of Punjab, promulgated under clause (1) of Article 213 of the Constitution of India on the 19th day of October, 2021, is hereby published for general information:-

**THE PLAKSHA UNIVERSITY, PUNJAB SECOND
ORDINANCE, 2021**

(Punjab Ordinance No. 2 of 2021)

AN

ORDINANCE


to establish and incorporate a University in the State of Punjab to be known as the Plaksha University, Punjab for the purposes of making provisions for imparting instructions, teaching, education, research, training and related activities at all levels in the discipline of higher education including engineering, humanities, social sciences, life sciences, management, and to provide for the matters connected therewith and/ or incidental thereto;

Whereas the Reimagining Higher Education Foundation, registered under the provisions of the Companies Act, 2013 (Central Act No. 18 of 2013), made a proposal to the State Government for setting up a self-financing University in the State of Punjab on the basis of the Punjab Private Universities Policy, 2010, to make provisions for all the streams of higher education at all levels;

Whereas the State Government, after due consideration of the said proposal of the aforesaid Foundation has come to the conclusion that the aforesaid Foundation is capable of establishing and running the University and accordingly has accepted its proposal for the establishment of the said Private University;

AND whereas in the circumstances referred to above, it is deemed expedient to establish the Plaksha University, Punjab for the aforesaid purposes.

Promulgated by the Governor of Punjab in the Seventy-second Year of the Republic of India.


Superintendent
Public Relations Secretariat
Punjab





Whereas the Legislative Assembly of the State of Punjab is not in session and the Governor is satisfied that circumstances exist, which render it necessary for him to take immediate action;

Now, therefore, in exercise of the powers conferred by clause (1) of Article 213 of the Constitution of India, the Governor of Punjab is pleased to promulgate the following Ordinance, namely:-

Short title and commencement.


1. (1) This Ordinance may be called the Plaksha University, Punjab Second Ordinance, 2021.

(2) It shall be deemed to have come into force on and with effect from the 20th day of August, 2021.

Definitions.

2. In this Ordinance, unless the context otherwise requires,-


- (a) 'Academic Council' means the Academic Council of the University;
- (b) 'authorities' means the authorities of the University;
- (c) 'Board of Management' means the Board of Management of the University;
- (d) 'Board of Studies' means a body to be constituted by the Governing Body;
- (e) 'campuses' means a contiguous area within which the University is situated;
- (f) 'Chairperson' means the Chairperson of the Foundation;
- (g) 'Chancellor' means the Chancellor of the University;
- (h) 'Chief Finance and Accounts Officer' means the Chief Finance and Accounts Officer of the University;
- (i) 'Dean' means the Dean of the University;
- (j) 'Finance Committee' means the Finance Committee of the University;
- (k) 'Foundation' means the Reimagining Higher Education Foundation registered under the provisions of the Companies Act, 2013 (Central Act No. 18 of 2013);
- (l) 'Governing Body' means the Governing Body of the University;
- (m) 'institution' means any institution or college or academic centre (by whatever name it may be called) established, run, managed,


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Punjab Civil Secretariat
Chandigarh





- recognized or constituted by the University, within the campus;
- (n) 'prescribed' means prescribed by the statutes, ordinances and regulations;
- (o) 'Registrar' means the Registrar of the University;
- (p) 'State Government' means the Government of the State of Punjab;
- (q) 'statutes', 'ordinances' and 'regulations' means statutes, ordinances and regulations of the University made under this Ordinance;
- (r) 'teacher' includes Professor, Associate Professor, Assistant Professor, and any such other person, who imparts instruction in the University or in any of its institutions and centres;
- (s) 'University' means the Plaksha University, Punjab established under section 3 of this Ordinance;
- (t) 'Vice-Chancellor' means the Vice-Chancellor of the University; and
- (u) 'Visitor' means the Visitor of the University.
3. (1) There shall be established a private University by the name of the Plaksha University, Punjab in the State of Punjab. Establishment of the University.
- (2) The University shall be run and managed by the Foundation in accordance with the provisions of this Ordinance.
- (3) The University shall be a body corporate by the name mentioned in sub-section (1) and shall have perpetual succession and a common seal. It shall have the power to acquire, lease, hold, mortgage and dispose of property, both moveable and immovable and to make contracts, and shall sue and be sued by the said name.
- (4) The Headquarter of the University shall be located at Block B, Sector 101 - Alpha, IT City, Sahibzada Ajit Singh Nagar, Punjab – 140306.
- (5) The University shall be self-financed and it shall not be entitled to receive any grant or other financial assistance from the State Government.
4. The objects of the University shall be, - Objects of the University.
- (i) to provide for instructions, teaching, education, research and training at all levels in disciplines of higher education including engineering, humanities, social sciences, life sciences, management, e-learning, and online education and training in any other stream and subject,


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Chandigarh




as per the needs of the industry and the society in general, as may be deemed necessary by the University, as permissible under the State or Central law and with the approval of the concerned Regulatory Authority;

- (ii) to promote the academic aspirations of rural students;
- (iii) to undertake industry-oriented teaching, training and research extension programmes and to provide employable skills with a view to contribute to the development of the society;
- (iv) to provide for research, creation, advancement and dissemination of knowledge, wisdom and understanding;
- (v) to encourage and motivate leading industrial houses for setting up at the campus their respective corporate institutes for academia-industry nexus;
- (vi) to disseminate knowledge so as to make it accessible to all strata of the society;
- (vii) to promote Punjabi studies, to provide for research in Punjabi language and literature and to undertake measures for the development of Punjabi language, literature and culture;
- (viii) to open study centers, campuses, centers within its jurisdiction in accordance with the prevailing regulations, with the approval of the State Government;
- (ix) to set up off-campus centres, off-shore campuses, study centres and zonal or regional centres as per the guidelines of the University Grants Commission or its equivalent Body so created by the Central Government, and with the approval of the State Government; and
- (x) to do all such things, as may be necessary or desirable in furtherance to the objects of the University.

Powers and functions of the University.


5. The University shall have the following powers and functions to be exercised and performed by it or through its officers and authorities, namely:-

- (i) to impart education and to provide for instructions in various branches of learning and to confer or grant, subject to such conditions as the University may determine, degrees, diplomas, certificates or other academic distinctions on the basis of


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Chandigarh

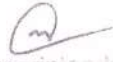


- examinations, evaluation or any other method of testing on persons and to withdraw any such degree, diploma, certificate or other academic distinctions for good and sufficient cause;
- (ii) to make provisions and adopt all measures, including adoption and updating of the curricula, in respect of starting courses of study, teaching, training, research, consultancy and granting recognition and affiliation relating to the courses through traditional as well as new innovative modes including online education modes;
 - (iii) to organize and to undertake extra mural studies and extension services;
 - (iv) to conduct examinations for granting or conferring Post Doctorate, Doctorate, Masters, Degrees, Diplomas and Certificates;
 - (v) to provide for dual Degree, Diploma or Certificate vis-à-vis other Universities on reciprocal basis;
 - (vi) to institute and confer honorary Degrees and other distinctions, as may be prescribed;
 - (vii) to conduct e-learning and online education programmes, as may be determined by the University;
 - (viii) to provide for equivalence of the degrees, diplomas and certificates of the students completing their courses partially or in full, from any other recognized University, Board or Council or any other competent authority;
 - (ix) to institute and confer the designation of Professor, Associate Professor, Reader, Assistant Professor, Lecturer or any other equivalent designation, as may be required by the University in its campuses or its institutions and to appoint persons as such;
 - (x) to create academic, administrative, ministerial, technical and other posts and to make appointments thereto;
 - (xi) to appoint persons working in any other University or institutions or organizations having specific knowledge permanently or for a specified period;


Superintendent
Punjab Civil Secretariat
Chandigarh




- (xii) to co-operate, collaborate or associate with any other University or authority or institution in such manner and for such purpose as the University may determine;
- (xiii) to establish and maintain study centres, examination centres, information centres, schools, institutions, specialized laboratories or other units for research and instructions as may be determined by the University for furtherance of its objects within its campus;
- (xiv) to undertake research and consultancy and for that purpose to enter into such arrangements with other institutions or bodies as the University may deem necessary;
- (xv) to determine standards for admission into the University, which may include examination, evaluation or any other method of testing;
- (xvi) to prescribe the fee structure for various categories of students, in view of clause 8 of the Punjab Private Universities Policy, 2010;
- (xvii) to demand and collect fees and other charges, as may be prescribed;
- (xviii) to supervise the residences of the students of the University and to make arrangements for the promotion of their health and general welfare;
- (xix) to make special arrangements in respect of female students, as the University may consider necessary and desirable;
- (xx) to regulate and enforce discipline among the employees and students of the University and take such disciplinary measures in this regard, as may be deemed necessary by the University;
- (xxi) to make arrangements for promoting the health and general welfare of the employees of the University;
- (xxii) to receive donations; and acquire, hold, manage and dispose of any moveable or immovable property;
- (xxiii) to borrow money for the purposes of the University, with the approval of the Foundation;
- (xxiv) to mortgage or hypothecate the property of the University with the approval of the Foundation;


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Chandigarh

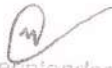


- (xxv) to hold, manage and run the funds of the Foundation and the endowments created in favour of the University;
- (xxvi) to receive and to raise loans and advances for the University;
- (xxvii) to purchase, acquire and take on lease or mortgage any immovable or movable property and to sell, lease, mortgage, alienate and transfer any immovable or movable property belonging to or vested in the University;
- (xxviii) to receive grants from the University Grants Commission and other Central or State agencies;
- (xxix) to fix, determine and provide salaries, remunerations and honoraria to teachers and employees of the University in accordance with the norms specified by the University Grants Commission;
- (xxx) to do self-certification, which shall be exempted from obtaining any permission, approval, license, certificate, No Objection Certificate or authorization from the State Government or any other body, set up by the State Government;
- (xxxi) to frame statutes, ordinances and regulations for carrying out the objects of the University; and
- (xxxii) to perform all such other functions, which may be necessary or desirable in furtherance of the objects of the University.
6. (1) The University shall exercise its jurisdiction within its campuses in the State of Punjab only. Jurisdiction of University.
- (2) The University shall affiliate to it those educational or professional institutions, established, run or managed by the Foundation within the Campus regard to which a specific decision is taken by the Foundation.
7. The following shall be the officers of the University, namely: - Officers of the University.
- (i) the Visitor;
 - (ii) the Chancellor;
 - (iii) the Vice-Chancellor;
 - (iv) the Registrar;
 - (v) the Deans of the Faculties;
 - (vi) the Chief Finance and Accounts Officer; and


Superintendent
Punjab Civil Secretariat
Chandigarh



- (vii) such other officers of the University, as may be declared by the statutes, to be the officers of the University.
- The Visitor.
8. (1) The Governor of Punjab shall be the Visitor of the University.
(2) The Visitor shall preside over the convocation of the University for conferring degrees and diplomas.
(3) The Visitor shall have the right to call for any information relating to the affairs of the University.
(4) The Visitor may cause the inspection, scrutiny, investigation, survey or inquiry or any other such like thing to be made by such person, as he may direct in respect of administrative, academic or executive matters of the University.
(5) The Visitor shall, in every case, give notice to the University of his or her intention to cause the inspection, scrutiny, investigation, survey or inquiry or any other such like thing, to be made and the University shall appoint a representative, who shall be present at such inspection, scrutiny, investigation, survey or inquiry, or any other such like thing, as the case may be.
(6) The Visitor may inform the Vice-Chancellor about the results of such inspection, scrutiny, investigation, survey or inquiry and the Vice-Chancellor shall communicate to the Governing Body the views of the Visitor along with such advice, as the Visitor may have tendered and the action to be taken on such advice.
(7) The Vice-Chancellor shall inform the Visitor about the action taken or proposed to be taken by the University with respect to the inspection, scrutiny, investigation, survey, inquiry, or any other such like thing, as the case may be.
(8) If the State Government considers it appropriate, in public interest, to make inspection, scrutiny, investigation, survey or inquiry, as the case may be, in respect of any matter relating to the University or its institutions, a reference shall be made by the State Government to the Vice-Chancellor, who shall cause such inspection, scrutiny, investigation, survey or inquiry to be made.
- The Chancellor.
9. (1) The Chairperson or any distinguished person nominated by the Foundation shall be the Chancellor of the University and in the absence of the Visitor, the Chancellor shall preside over the convocation of the University.
(2) The Chancellor shall be the Chairman of the Governing Body and


Superintendent
Punjab Civil Secretariat
Chandigarh



he or she shall approve all appointments, nominations, removals, suspensions and reinstatements of the employees and officers of the University on the recommendation of the Governing Body of the University.

(3) The Chancellor may amend or revoke any decision taken by any authority or officer of the University and may exercise his powers, to do all necessary things to facilitate the smooth functioning of the University on the recommendation of the Governing Body.


(4) The Chancellor shall have the power to perform all such other functions, as may be required to do in furtherance to the objects of the University and any matter incidental thereto and the decisions taken by the Chancellor shall be final and binding on all the concerned of the University.

(5) If, in the opinion of the Chancellor, any decision of any officer or authority of the University is beyond the powers conferred under this Ordinance or the statutes or the ordinances or the regulations or is likely to be prejudicial to the interests of the University, the Chancellor shall ask such officer or authority to revise his or its decision within a period of fifteen days and in case the officer or authority refuses to revise such decision, wholly or partly, or fails to take any decision within a period of fifteen days, the decision of the Chancellor thereon shall be final.

(6) If, at any time, upon the representation made or otherwise, it appears to the Chancellor that the Vice-Chancellor or any other officer of the University,-

- (a) has made default in performing any duty imposed upon him under this Ordinance or otherwise; or
- (b) has acted in a manner prejudicial to the interests of the University; or
- (c) is incapable of managing the affairs of the University, the Chancellor may, notwithstanding the fact that term of that officer has not expired by an order in writing and stating the reasons therein, require the Vice-Chancellor or the officer concerned to relinquish his or her office from such date, as may be specified in the order. The Vice-Chancellor or the officer concerned shall be deemed to have relinquished his office from the date so specified:

Provided that no such order shall be passed, unless the grounds


Superintendent
Punjab Govt. Secretariat
Chandigarh



on which such action is proposed to be taken are communicated to the Vice-Chancellor or to the officer concerned and he or she is given reasonable opportunity of being heard.

The Vice-Chancellor.

10. (1) The Vice-Chancellor shall be appointed by the Chancellor from amongst the panel of three persons recommended by the Governing Body.

(2) No person shall be appointed as Vice-Chancellor, unless he or she possesses such qualifications, as are specified by the University Grants Commission or its equivalent body so created by the Central Government.

(3) The Vice-Chancellor shall be the overall in-charge of the University who shall exercise general superintendence and control in the affairs of the University and shall execute the decisions of various authorities of the University.

(4) In case of the absence of the Visitor and the Chancellor, the Vice-Chancellor shall preside over the convocation of the University.

(5) The Vice-Chancellor shall exercise such powers and perform such functions, as may be prescribed.

The Registrar.

11. (1) The Registrar shall be appointed by the Chancellor from amongst the panel of three persons recommended by the Governing Body.

(2) No person shall be appointed as Registrar, unless he or she possesses such qualifications as are specified by the University Grants Commission, or its equivalent body so created by the Central Government.

(3) The Registrar shall sign all contracts and authenticate all documents or records for and on behalf of the University.

(4) The Registrar shall be the Member-Secretary of the Governing Body, the Board of Management and the Academic Council but he or she shall not have the right to vote.


(5) The Registrar shall exercise such other powers and perform such other functions, as may be prescribed.

The Chief Finance and Accounts Officer.

12. (1) The Chief Finance and Accounts Officer shall be appointed by the Chancellor in such manner, as may be prescribed.

(2) No person shall be qualified to be appointed as Chief Finance and Accounts Officer, unless he has passed the Chartered Accountancy Test conducted by the Institute of Chartered Accountants of India.

(3) The Chief Finance and Accounts Officer shall exercise such powers


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Chandigarh





and perform such functions, as may be prescribed.

13. (1) The University may appoint such other officers, as it may deem necessary for its smooth functioning. Other officers.

(2) The manner of appointment of such other officers of the University and their powers and functions shall be such, as may be prescribed.

14. The following shall be the authorities of the University, namely: -

Authorities of
the University.

- (i) the Governing Body;
- (ii) the Board of Management;
- (iii) the Academic Council;
- (iv) the Finance Committee; and
- (v) such other authorities as may be declared by the statutes to be the authorities of the University.


15. (1) The Governing Body of the University shall consist of the following persons, namely: -

The Governing
Body.

- (a) the Chancellor; : Chairman
- (b) the Vice-Chancellor; : Member
- (c) five persons nominated by the Foundation out of whom three shall be eminent educationists; : Members
- (d) one expert of management or information technology from outside the University nominated by the Chancellor; : Member
- (e) one expert of finance nominated by the Chancellor; : Member
- (f) one eminent educationist nominated by the Secretary to Government of Punjab, Department of Higher Education in consultation with the Chancellor; and : Member
- (g) the Administrative Secretary to Government of Punjab, Department of Higher Education or his representative not below the rank of Joint Secretary. : Member

(2) The Governing Body shall be the supreme body of the University. It shall perform the following functions, namely: -

- (a) to provide general superintendence and to give directions for


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Chandigarh



controlling the functioning of the University in accordance with the statutes, the ordinances and the regulations;

- (b) to review the decisions of other authorities of the University in case these are not in conformity with the provisions of the statutes, the ordinances and the regulations;
- (c) to approve the budget and annual report of the University;
- (d) to lay down the extensive policies to be followed by the University; and
- (e) to exercise such other powers, as may be prescribed by the statutes.

(3) The Governing Body shall meet at least twice in a calendar year.

(4) The quorum for meeting of the Governing Body shall be six.

The Board of Management.

16. (1) The Board of Management shall consist of the following members, namely: -

- (a) the Chancellor; : Chairperson
- (b) the Vice-Chancellor; : Member
- (c) five members of the Foundation nominated by the Foundation; : Members
- (d) three persons who are not the members of the Foundation, nominated by the Foundation; : Members
- (e) two persons from amongst the teachers nominated by the Foundation; : Members
- (f) Director Higher Education, Punjab as representative of the State Government; and : Members
- (g) two teachers nominated by the Chancellor. : Member


(2) The Board of Management shall exercise such powers and perform such functions, as may be prescribed.

(3) The Board of Management shall meet at least twice in a calendar year.

(4) The quorum for meeting of the Board of Management shall be seven.

The Academic Council.

17. (1) The Academic Council shall consist of the following members, namely: -


Superintendent
Punjab Civil Secretariat
Chandigarh



- (a) the Vice-Chancellor; : Chairperson
(b) one eminent academician nominated by the : Member
State Government as its representative; and
(c) such other members, as may be prescribed. : Members

(2) The Academic Council shall be the principal academic body of the University and it shall, subject to the provisions of this Ordinance, the statutes, the ordinances and the regulations, coordinate and exercise general supervision over the academic policies of the University.

(3) The quorum for meeting of the Academic Council shall be such, as may be prescribed.

18. (1) The Finance Committee shall consist of the following members, The Finance
namely: - Committee.

- (i) the Vice-Chancellor; : Chairperson
(ii) the Dean Academic Affairs; : Member
(iii) the Registrar; : Member
(iv) two persons nominated by the Foundation out of : Members
whom one shall be a Financial Expert; and
(v) the Chief Finance and Accounts Officer. : Member-
Secretary

(2) The members nominated by the Foundation shall hold office for a period of two years.

19. (1) The Chief Accounts and Finance Officer shall get the annual budget of the University prepared along with the requisite documents and submit the same to the Finance Committee for its approval. The Chief Accounts and Finance Officer shall also get the accounts of the annual income and expenditure of the University prepared and shall get the same audited from the Chartered Accountant so appointed by the Finance Committee in this regard. Functions of
the Finance
Committee.

(2) The budget approved by the Finance Committee along with the note with regard to the audit of income and expenditure of the University, referred to in sub-section (1), shall be placed before the Chancellor for its approval.


(3) The Finance Committee shall tender advice to the Chancellor on financial matters of the University.


Superintendent
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Chandigarh



- Other authorities. 20. The composition, constitution, powers and functions of authorities under clause (v) of section 14, shall be such, as may be prescribed.
- Disqualification for membership of an authority or body. 21. A person shall be disqualified for being a member of any of the authorities or bodies of the University, if he, -
(i) is of unsound mind and stands so declared by a competent court; or
(ii) is an un-discharged insolvent; or
(iii) has been convicted of any offence involving moral turpitude; or
(iv) has been punished for indulging in or promoting unfair practice in the conduct of any examination in any form and anywhere.
- Acts or proceedings not to be invalidated due to vacancies. 22. No act done, or proceedings taken, under this Ordinance by any authority or other body of the University shall be invalid merely on the ground of, -
(a) any vacancy or defect in the constitution of the authority or body; or
(b) any defect or irregularity in nomination or appointment of a person acting as member thereof; or
(c) any defect or irregularity in such act or proceeding not affecting the merits of the case.
- Filling up of emergent vacancies. 23. If any vacancy occurs in any authority or body of the University due to death, resignation or removal of a member or due to change of capacity in which he or she was appointed or nominated, the same shall be filled in as early as possible by the authority or body, which had appointed or nominated such a member.

Provided that the person so appointed or nominated as a member of any authority or body of the University in an emergent vacancy, shall remain member of such authority or body only for the remaining tenure of the member, in whose place he or she is appointed or nominated, as the case may be.
- Committees. 24. The authorities or officers of the University may constitute such committees as may be necessary for performing specific tasks by such committees. The constitution of such committees and their duties shall be such, as may be prescribed.
- Power to make statutes. 25. (1) The Governing Body may, from time to time, make statutes or may amend or repeal the same.
(2) The statutes or any amendment made therein or repeal thereof, shall require the approval of the Chancellor.


Deputy Director
Publicity & Social Media
Chandigarh




(3) Subject to the provisions of this Ordinance, the statutes may provide for the following matters, namely: -

- (i) the constitution, powers and functions of the authorities and other bodies of the University, as may be constituted from time to time;
- (ii) the terms and conditions of appointment of the Vice-Chancellor and its powers and functions;
- (iii) the manner, terms and conditions of appointment of the Registrar, and the Chief Finance and Accounts Officer and their powers and functions;
- (iv) the manner, terms and conditions of appointment of other officers and teachers and their powers and functions;
- (v) the terms and conditions of service of the employees of the University;
- (vi) the procedure for arbitration in case of dispute between the University, officers, teachers, employees and students;
- (vii) the conferment of honorary degrees;
- (viii) the exemption of students from payment of tuition fee and for awarding them scholarships and fellowships;
- (ix) the policy of admissions, including regulation of reservation of seats, keeping in view of clause 9 of the Punjab Private Universities Policy, 2010;
- (x) the number of seats in different courses; and
- (xi) all other matters for which statutes are required to be made under this Ordinance.

(4) After the approval of the Chancellor, the statutes of the University shall be submitted to the State Government for its approval.

(5) The State Government shall consider the statutes submitted by the University and shall give its approval without or with such modifications, if any, as it may deem necessary and return the statutes to the University.

(6) The University shall, with the approval of the Governing Body, communicate its concurrence to the statutes as approved by the State Government, and if it desires not to give effect to any or all of the modifications made by the State Government, it may give reasons thereof.


Superintendent
Punjab Civil Services
Chandigarh



(7) After the statutes are finally approved by the State Government, these shall be published in the Official Gazette of the University.

(8) The statutes so made, shall not be amended without the approval of the State Government.

Power to make ordinances.

26. (1) The Governing Body may, from time to time, make ordinances or may amend, or repeal the same.

(2) Every ordinance or any amendment made therein or repeal thereof, shall require the approval of the Chancellor.

(3) Subject to the provisions of this Ordinance and the statutes, the ordinances may provide for the following matters, namely: -

- (i) the admission of students to the University and their enrolment as such;
- (ii) the courses of study to be laid down for the degrees, diplomas and certificates of the University;
- (iii) the degrees, diplomas, certificates and other academic distinctions;
- (iv) the fees to be charged for various courses, examinations, degrees and diplomas of the University;
- (v) the conditions for the award of fellowships, scholarships, studentships, medals and prizes;
- (vi) the conduct of examinations, including the terms of office, the manner of appointment and the duties of the examining bodies, examiners and moderators;
- (vii) the conditions of hostel facilities for students in the University;
- (viii) taking disciplinary action against the students of the University;
- (ix) the creation, composition and function of any other body, which is considered necessary for improving the academic standard of the University;
- (x) the manner of co-operation and collaboration with other Universities and institutions; and
- (xi) all other matters which by this Ordinance or the statutes made thereunder are required to be provided by the ordinances.

(4) After the approval of the Chancellor, the ordinances of the University shall be submitted to the State Government for its approval.


Supriya Arora
Principal and Secretary
Ghazipur 2



(5) The State Government shall consider the ordinances submitted by the University and shall give its approval without or with such modifications, if any, as it may deem necessary and return the same to the University.

(6) The University shall, with the approval of the Governing Body, communicate its concurrence to the ordinances as approved by the State Government and if it desires not to give effect to any or all of the modifications made by the State Government, it may give reasons thereof.

(7) After the ordinances are finally approved by the State Government, these shall be published in the Official Gazette of the University.

(8) The ordinances so made, shall not be amended without the approval of the State Government.

27. (1) The Governing Body may, from time to time, make regulations or may amend, or repeal the same. Power to make regulations.

(2) Every regulation or any amendment made therein or repeal thereof, shall require the approval of the Chancellor.

(3) After the approval of the Chancellor, the regulations of the University shall be submitted to the State Government for its approval.

(4) The State Government shall consider the regulations submitted by the University and shall give its approval without or with such modifications, if any, as it may deem necessary and forward the same to the University.

(5) The University shall, with the approval of the Governing Body, communicate its concurrence to the regulations as approved by the State Government and if it desires not to give effect to any or all of the modifications made by the State Government, it may give reasons thereof.

(6) After the regulations are finally approved by the State Government, these shall be published in the Official Gazette of the University.

(7) The regulations so made, shall not be amended without the approval of the State Government.

28. (1) The University shall be prohibited from conferring any Degrees, not recognized by the University Grants Commission or its equivalent body constituted by the Central Government. University to follow rules, regulations etc. of the regulating bodies.

(2) It shall be mandatory for the University to follow the University Grants Commission (Establishment and Maintenance of Standards in Private


Superintendent
Punjab Civil Secretariat
Chandigarh



Universities) Regulations, 2003, or any other regulations made for private Universities by the University Grants Commission or any other regulatory bodies.

- General Fund. 29. (1) The University shall have General Fund to which shall be credited,-
- (a) fees and other charges received by the University;
 - (b) any income received from consultancy and other work undertaken by the University; and
 - (c) funds and grants received from any source by the University for research projects from any Government and non-Government funding agencies.
- (2) The General Fund shall be utilized for the following purposes, namely:-
- (a) for the repayment of the debts, including interest charges thereto incurred by the University;
 - (b) for the upkeep of the assets of the University;
 - (c) for the payment of the cost of audit of the fund;
 - (d) for meeting the expenses of any suit or proceedings;
 - (e) for the payment of salaries and allowances of the officers and employees of the University and for the payment of any benefit to any such officer and employee;
 - (f) for the payment of travelling and other allowances of the members of the authorities, committee or Board of the University;
 - (g) for the payment of fellowships, scholarships, assistanceships and other awards to students belonging to economically weaker sections of the society or research associates or trainees, as the case may be, or to any student eligible for such awards;
 - (h) for the payment of any expenses incurred by the University;
 - (i) for acquisition of land or any kind of development work or likewise activities for the purpose of the University;
 - (j) for the payment of cost of capital and repayment of loans incurred by the Foundation for setting up and running the University and the investments made therefore;


Superintendent
Punjab Civil Secretariat
Chandigarh



- (k) for the payment of charges and expenditure relating to the consultancy work undertaken by the University; and
- (l) for the payment of any expenditure, salaries, taxes, liabilities by the Foundation for or on behalf of the University.

30. The accounts of the income and expenditure of the University shall be audited by the Chartered Accountant of the University, and the same shall be submitted once in a year by the Chief Finance and Accounts Officer to the Governing Body for its approval. Annual report.

31. The University shall prepare and publish a semester-wise or annual, as the case may be, tentative Schedule of Examinations including various academic activities to be conducted by the University in the beginning of each academic session, but not later than the 30th August in a Calendar year. Examinations.

Explanation. - 'Schedule of Examinations' means the time table giving details about the time, day and date of the commencement of each paper which is part of the scheme of examinations including the details of practical examinations and viva-voce, if any.


32. (1) The University shall strive to declare the results of examinations conducted by it within a period of forty-five days from the last date of the examination of particular course but, in any case, not later than sixty days from the said date. Declaration of results.

(2) No examination or the result of an examination shall be held invalid only for the reason that the University has not followed the Schedule of Examinations.

33. The convocation of the University shall be held in every academic year for conferring degrees, diplomas, certificates or any other academic distinction or for any other purpose, in such manner, as may be prescribed. Convocation.

34. If any question arises with respect to the appointment or entitlement of any person, to be a member of any authority or other body of the University, the same shall be referred to the Chancellor, whose decision thereon shall be final and binding. Disputes concerning authorities and bodies.

35. If any difficulty arises in giving effect to any of the provisions of this Ordinance, the State Government may, in consultation with the Chancellor, by an order published in the Official Gazette, make such provision, not inconsistent with the provisions of this Ordinance, as it may deem necessary for removing such difficulty. Power to remove difficulties.


Secretary
The J.O. C & Secretariat
Chandigarh



Provided that no such order shall be made under this section after the expiry of a period of two years from the date of commencement of this Ordinance.

Protection of
action taken in
good faith.

36. No suit or other legal proceedings shall lie against any officer or employee of the University for anything which is done in good faith or intended to be done in pursuance of the provisions of this Ordinance, the statutes, the ordinances or the regulations.

Transitory
Provisions.

37. Notwithstanding anything contained in this Ordinance, the statutes, the ordinances or the regulations made thereunder, the Foundation may, subject to the availability of the funds, discharge all or any of the functions of the University for the purposes of carrying out the provisions of this Ordinance, the statutes, the ordinances and the regulations and for that purpose, may exercise such powers and perform such duties, which by this Ordinance or by such statutes, the ordinances and the regulations are to be exercised or performed by any authority or officer of the University, until such authority comes into existence or officer is appointed.

Repeal and
savings.

38. (1) The Plaksha University, Punjab Ordinance, 2021 (Punjab Ordinance No. 1 of 2021), is hereby repealed.

(2) Notwithstanding such repeal, anything done or any action taken under the Ordinance referred to in sub-section (1), shall be deemed to have been done or taken under this Ordinance.

BANWARILAL PUROHIT,
Governor of Punjab.

S.K. AGGARWAL,
Secretary to Government of Punjab,
Department of Legal and Legislative Affairs.

2426/10-2021/Pb, Govt. Press, S.A.S. Nagar


Superintendent
Punjab Govt Secretariat
Chandigarh





Government of Punjab
Department of Higher Education
(Education-I Branch)

To

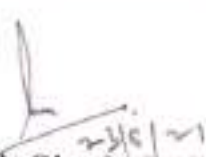
Director,
Development & Operations,
Reimagining Higher Education Foundation.
Registered office: 302, Gopal Heights,
Netaji Subhash Place, New Delhi-110034.

Memo No: 8/11/2019-3EduI(4EduI)/ 1901
Dated, Chandigarh: 23/08/21

Subject: - Regarding establishment of Plaksha University Punjab,
Block-B, Sector-101 Alpha, IT City, SAS Nagar (Mohali),
Punjab.

With reference to your letter dated 14.12.2019 on the subject
cited above.

2. With reference subject cited above, it is informed that the Plaksha
University Punjab has been established by promulgating an Ordinance No. 1
of 2021 by the State of Punjab and notification has been issued on dated
20.08.2021 by the Department of Legal and Legislative Affairs, Punjab in
this regard. A copy of published Ordinance is attached herewith for your
information and necessary action.


(Paramjit Singh, IAS)
Special Secretary to Govt. of Punjab
Department of Higher Education





Punjab Government Gazette

EXTRAORDINARY

Published by Authority

CHANDIGARH, FRIDAY, AUGUST 20, 2021
(SRAVANA 29, 1943 SAKA)

LEGISLATIVE SUPPLEMENT

| | Contents | Pages |
|------------|--|-----------|
| Part - I | Acts | |
| | <i>Nil</i> | |
| Part - II | Ordinances | |
| | The Plaksha University, Punjab Ordinance, 2021. | |
| | (Punjab Ordinance No. 1 of 2021) | 1-20 |
| Part - III | Delegated Legislation | |
| | 1. Notification No. G.S.R. 115/P.A. 8/2021/S.29/2021, dated the 19th August, 2021, containing the Punjab <i>Abadi deh</i> (Record of Rights) Rules, 2021. | 1883-1894 |
| | 2. Notification No. G.S.R. 116/Const./Art.309/P.A.10/2008/S.80/Amd.(2)/2021, dated the 20th August, 2021, containing amendment in the Punjab Police Investigation Cadre (Subordinate Ranks) Service Rules, 2020. | 1895 |

(cxi)



(exii) PUNJAB GOVT. GAZ. (EXTRA), AUGUST 20, 2021
(SRVN 29, 1943 SAKA)

3. Notification No. G.S.R. 117/Const./Art.309/
P.A.10/2008/S.80/Amd(4)/2021, dated the
20th August, 2021, containing amendment in
the Punjab Intelligence Cadre (Group 'C')
Service Rules, 2015.

-1897

Part - IV Correction Slips, Republications and
Replacements

Nā



PART II

**DEPARTMENT OF LEGAL AND LEGISLATIVE AFFAIRS, PUNJAB
NOTIFICATION**

The 20th August, 2021

No. 21-Leg./2021.-The following Ordinance of the Governor of Punjab, promulgated under clause (1) of Article 213 of the Constitution of India on the 19th day of August, 2021, is hereby published for general information:-

**THE PLAKSHA UNIVERSITY, PUNJAB ORDINANCE, 2021
(Punjab Ordinance No. 1 of 2021)**

AN

ORDINANCE

to establish and incorporate a University in the State of Punjab to be known as the Plaksha University, Punjab for the purposes of making provisions for imparting instructions, teaching, education, research, training and related activities at all levels in the discipline of higher education including engineering, humanities, social sciences, life sciences, management, and to provide for the matters connected therewith and/ or incidental thereto;

Whereas the Reimagining Higher Education Foundation, registered under the provisions of the Companies Act, 2013 (Central Act No. 18 of 2013), made a proposal to the State Government for setting up a self-financing University in the State of Punjab on the basis of the Punjab Private Universities Policy, 2010, to make provisions for all the streams of higher education at all levels;

Whereas the State Government, after due consideration of the said proposal of the aforesaid Foundation has come to the conclusion that the aforesaid Foundation is capable of establishing and running the University and accordingly has accepted its proposal for the establishment of the said Private University;

AND whereas in the circumstances referred to above, it is deemed expedient to establish the Plaksha University, Punjab for the aforesaid purposes,

Promulgated by the Governor of Punjab in the Seventy-second year of the Republic of India.


Special Secretary to Government of Punjab
Department of Higher Education and Languages.





2 PUNJAB GOVT. GAZ. (EXTRA), AUGUST 20, 2021
(SRVN 29, 1943 SAKA)

Whereas the Legislative Assembly of the State of Punjab is not in session and the Governor is satisfied that circumstances exist, which render it necessary for him to take immediate action;

Now, therefore, in exercise of the powers conferred by clause (1) of Article 213 of the Constitution of India, the Governor of Punjab is pleased to promulgate the following Ordinance, namely:-

Short title and commencement.

1. (1) This Ordinance may be called the Plaksha University, Punjab Ordinance, 2021.

(2) It shall come into force on and with effect from the date of its publication in the official Gazette.

Definitions.

2. In this Ordinance, unless the context otherwise requires,-

- (a) 'Academic Council' means the Academic Council of the University;
- (b) 'authorities' means the authorities of the University;
- (c) 'Board of Management' means the Board of Management of the University;
- (d) 'Board of Studies' means a body to be constituted by the Governing Body;
- (e) 'campuses' means a contiguous area within which the University is situated;
- (f) 'Chairperson' means the Chairperson of the Foundation;
- (g) 'Chancellor' means the Chancellor of the University;
- (h) 'Chief Finance and Accounts Officer' means the Chief Finance and Accounts Officer of the University;
- (i) 'Dean' means the Dean of the University;
- (j) 'Finance Committee' means the Finance Committee of the University;
- (k) 'Foundation' means the Reimagining Higher Education Foundation registered under the provisions of the Companies Act, 2013 (Central Act No. 18 of 2013);
- (l) 'Governing Body' means the Governing Body of the University;
- (m) 'institution' means any institution or college or academic centre (by whatever name it may be called) established, run, managed, recognized or constituted by the University, within the campus;



- (m) 'prescribed' means prescribed by the statutes, ordinances and regulations;
- (n) 'Registrar' means the Registrar of the University;
- (p) 'State Government' means the Government of the State of Punjab;
- (q) 'statutes', 'ordinances' and 'regulations' means statutes, ordinances and regulations of the University made under this Ordinance;
- (r) 'teacher' includes Professor, Associate Professor, Assistant Professor, and any such other person, who imparts instruction in the University or in any of its institutions and centres;
- (s) 'University' means the Plaksha University, Punjab established under section 3 of this Ordinance;
- (t) 'Vice-Chancellor' means the Vice-Chancellor of the University; and
- (u) 'Visitor' means the Visitor of the University.

3. (1) There shall be established a private University by the name of the Plaksha University, Punjab in the State of Punjab.

Establishment of the University.

(2) The University shall be run and managed by the Foundation in accordance with the provisions of this Ordinance.

(3) The University shall be a body corporate by the name mentioned in sub-section (1) and shall have perpetual succession and a common seal. It shall have the power to acquire, lease, hold, mortgage and dispose of property, both moveable and immovable and to make contracts; and shall sue and be sued by the said name.

(4) The Headquarter of the University shall be located at Block B, Sector 101 - Alpha, IT City, Sahibzada Ajit Singh Nagar, Punjab - 140306.

(5) The University shall be self-financed and it shall not be entitled to receive any grant or other financial assistance from the State Government.

4. The objects of the University shall be, -

Objects of the University.

- (i) to provide for instructions, teaching, education, research and training at all levels in disciplines of higher education including engineering, humanities, social sciences, life sciences, management, e-learning, and online education and training in any other stream and subject, as per the needs of the industry and

Special Secretary to Government of Punjab
Department of Higher Education and Languages.



- the society in general, as may be deemed necessary by the University, as permissible under the State or Central law and with the approval of the concerned Regulatory Authority;
- (ii) to promote the academic aspirations of rural students;
 - (iii) to undertake industry-oriented teaching, training and research extension programmes and to provide employable skills with a view to contribute to the development of the society;
 - (iv) to provide for research, creation, advancement and dissemination of knowledge, wisdom and understanding;
 - (v) to encourage and motivate leading industrial houses for setting up at the campus their respective corporate institutes for academia-industry nexus;
 - (vi) to disseminate knowledge so as to make it accessible to all strata of the society;
 - (vii) to promote Punjabi studies, to provide for research in Punjabi language and literature and to undertake measures for the development of Punjabi language, literature and culture;
 - (viii) to open study centers, campuses, centers within its jurisdiction in accordance with the prevailing regulations, with the approval of the State Government;
 - (ix) to set up off-campus centres, off-shore campuses, study centres and zonal or regional centres as per the guidelines of the University Grants Commission or its equivalent Body so created by the Central Government, and with the approval of the State Government; and
 - (x) to do all such things, as may be necessary or desirable in furtherance to the objects of the University.

Powers and functions of the University

5. The University shall have the following powers and functions to be exercised and performed by it or through its officers and authorities, namely:-

- (i) to impart education and to provide for instructions in various branches of learning and to confer or grant, subject to such conditions as the University may determine, degrees, diplomas,

Special Secretary to Government of Punjab
Department of Higher Education and Languages.



- certificates or other academic distinctions on the basis of examinations, evaluation or any other method of testing on persons and to withdraw any such degree, diploma, certificate or other academic distinctions for good and sufficient cause;
- (iii) to make provisions and adopt all measures, including adoption and updating of the curricula, in respect of starting courses of study, teaching, training, research, consultancy and granting recognition and affiliation relating to the courses through traditional as well as new innovative modes including online education modes;
- (iv) to organize and to undertake extra mural studies and extension services;
- (v) to conduct examinations for granting or conferring Post Doctorate, Doctorate, Masters, Degrees, Diplomas and Certificates;
- (vi) to provide for dual Degree, Diploma or Certificate vis-à-vis other Universities on reciprocal basis;
- (vii) to institute and confer honorary Degrees and other distinctions, as may be prescribed;
- (viii) to conduct e-learning and online education programmes, as may be determined by the University;
- (ix) to provide for equivalence of the degrees, diplomas and certificates of the students completing their courses partially or in full, from any other recognized University, Board or Council or any other competent authority;
- (x) to institute and confer the designation of Professor, Associate Professor, Reader, Assistant Professor, Lecturer or any other equivalent designation, as may be required by the University in its campuses or its institutions and to appoint persons as such;
- (xi) to create academic, administrative, ministerial, technical and other posts and to make appointments thereto;
- (xii) to appoint persons working in any other University or institutions or organizations having specific knowledge permanently or for a specified period.


Special Secretary to Government of Punjab
Department of Higher Education and Languages.



- (xvi) to co-operate, collaborate or associate with any other University or authority or institution in such manner and for such purpose as the University may determine;
- (xvii) to establish and maintain study centres, examination centres, information centres, schools, institutions, specialized laboratories or other units for research and instructions as may be determined by the University for furtherance of its objects within its campus;
- (xviii) to undertake research and consultancy and for that purpose to enter into such arrangements with other institutions or bodies as the University may deem necessary;
- (xix) to determine standards for admission into the University, which may include examination, evaluation or any other method of testing;
- (xx) to prescribe the fee structure for various categories of students, in view of clause 8 of the Punjab Private Universities Policy, 2010;
- (xxi) to demand and collect fees and other charges, as may be prescribed;
- (xxii) to supervise the residences of the students of the University and to make arrangements for the promotion of their health and general welfare;
- (xxiii) to make special arrangements in respect of female students, as the University may consider necessary and desirable;
- (xxiv) to regulate and enforce discipline among the employees and students of the University and take such disciplinary measures in this regard, as may be deemed necessary by the University;
- (xxv) to make arrangements for promoting the health and general welfare of the employees of the University;
- (xxvi) to receive donations; and acquire, hold, manage and dispose of any moveable or immovable property;
- (xxvii) to borrow money for the purposes of the University, with the approval of the Foundation;


Special Secretary to Government of Punjab
Department of Higher Education and Languages.





- (XXIV) to mortgage or hypothecate the property of the University with the approval of the Foundation;
- (XXV) to hold, manage and run the funds of the Foundation and the endowments created in favour of the University;
- (XXVI) to receive and to raise loans and advances for the University;
- (XXVII) to purchase, acquire and take on lease or mortgage any immovable or movable property and to sell, lease, mortgage, alienate and transfer any immovable or movable property belonging to or vested in the University;
- (XXVIII) to receive grants from the University Grants Commission and other Central or State agencies;
- (XXIX) to fix, determine and provide salaries, remunerations and honoraria to teachers and employees of the University in accordance with the norms specified by the University Grants Commission;
- (XXX) to do self-certification, which shall be exempted from obtaining any permission, approval, license, certificate, No Objection Certificate or authorization from the State Government or any other body, set up by the State Government;
- (XXXI) to frame statutes, ordinances and regulations for carrying out the objects of the University; and
- (XXXII) to perform all such other functions, which may be necessary or desirable in furtherance of the objects of the University.
6. (1) The University shall exercise its jurisdiction within its campuses in the State of Punjab only. Jurisdiction of University.
- (2) The University shall affiliate to it those educational or professional institutions, established, run or managed by the Foundation within the Campus regard to which a specific decision is taken by the Foundation.
7. The following shall be the officers of the University, namely: - Officers of the University.
- (i) the Visitor;
- (ii) the Chancellor;
- (iii) the Vice-Chancellor;

Special Secretary to Government of Punjab
Department of Higher Education and Languages.



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- (iv) the Registrar;
- (v) the Deans of the Faculties;
- (vi) the Chief Finance and Accounts Officer; and
- (vii) such other officers of the University, as may be declared by the statutes, to be the officers of the University.

The Visitor

- 8 (1) The Governor of Punjab shall be the Visitor of the University.
- (2) The Visitor shall preside over the convocation of the University for conferring degrees and diplomas.
- (3) The Visitor shall have the right to call for any information relating to the affairs of the University.
- (4) The Visitor, in consultation with the Chancellor, may cause the inspection, scrutiny, investigation, survey or inquiry or any other such like thing to be made by such person, as he may direct in respect of administrative, academic or executive matters of the University.
- (5) The Visitor shall, in every case, give notice to the University of his or her intention to cause the inspection, scrutiny, investigation, survey or inquiry or any other such like thing, to be made and the University shall appoint a representative, who shall be present at such inspection, scrutiny, investigation, survey or inquiry, or any other such like thing, as the case may be.
- (6) The Visitor may inform the Vice-Chancellor about the results of such inspection, scrutiny, investigation, survey or inquiry and the Vice-Chancellor shall communicate to the Governing Body the views of the Visitor along with such advice, as the Visitor may have tendered and the action to be taken on such advice.
- (7) The Vice-Chancellor shall inform the Visitor about the action taken or proposed to be taken by the University with respect to the inspection, scrutiny, investigation, survey, inquiry, or any other such like thing, as the case may be.
- (8) If the State Government considers it appropriate, in public interest, to make inspection, scrutiny, investigation, survey or inquiry, as the case may be, in respect of any matter relating to the University or its institutions, a reference shall be made by the State Government to the Vice-Chancellor, who shall cause such inspection, scrutiny, investigation, survey or inquiry to be made.


Special Secretary to Government of Punjab
Department of Higher Education and Languages.



(1) The Chairperson or any distinguished person nominated by the Foundation shall be the Chancellor of the University and in the absence of the Visitor, the Chancellor shall preside over the convocation of the University. The Chancellor.

(2) The Chancellor shall be the Chairman of the Governing Body and he or she shall approve all appointments, nominations, removals, suspensions and reinstatements of the employees and officers of the University on the recommendation of the Governing Body of the University.

(3) The Chancellor may amend or revoke any decision taken by any authority or officer of the University and may exercise his powers, to do all necessary things to facilitate the smooth functioning of the University on the recommendation of the Governing Body.

(4) The Chancellor shall have the power to perform all such other functions, as may be required to do in furtherance to the objects of the University and any matter incidental thereto and the decisions taken by the Chancellor shall be final and binding on all the concerned of the University.

(5) If, in the opinion of the Chancellor, any decision of any officer or authority of the University is beyond the powers conferred under this Ordinance or the statutes or the ordinances or the regulations or is likely to be prejudicial to the interests of the University, the Chancellor shall ask such officer or authority to revise his or its decision within a period of fifteen days and in case the officer or authority refuses to revise such decision, wholly or partly, or fails to take any decision within a period of fifteen days, the decision of the Chancellor thereon shall be final.

(6) If, at any time, upon the representation made or otherwise, it appears to the Chancellor that the Vice-Chancellor or any other officer of the University, -

- (a) has made default in performing any duty imposed upon him under this Ordinance or otherwise; or
- (b) has acted in a manner prejudicial to the interests of the University; or
- (c) is incapable of managing the affairs of the University, the Chancellor may, notwithstanding the fact that term of that officer has not expired by an order in writing and stating the reasons therein, require the Vice-Chancellor or the officer concerned to relinquish his or her office from such date, as may be specified in the order. The Vice-


Special Secretary to Government of Punjab
Department of Higher Education and Languages.



Chancellor or the officer concerned shall be deemed to have relinquished his office from the date so specified:

Provided that no such order shall be passed, unless the grounds on which such action is proposed to be taken are communicated to the Vice-Chancellor or to the officer concerned and he or she is given reasonable opportunity of being heard.

The Vice-Chancellor

10 (1) The Vice-Chancellor shall be appointed by the Chancellor from amongst the panel of three persons recommended by the Governing Body.

(2) No person shall be appointed as Vice-Chancellor, unless he or she possesses such qualifications, as are specified by the University Grants Commission or its equivalent body so created by the Central Government.

(3) The Vice-Chancellor shall be the overall in-charge of the University who shall exercise general superintendence and control in the affairs of the University and shall execute the decisions of various authorities of the University.

(4) In case of the absence of the Visitor and the Chancellor, the Vice-Chancellor shall preside over the convocation of the University.

(5) The Vice-Chancellor shall exercise such powers and perform such functions, as may be prescribed.

The Registrar

11 (1) The Registrar shall be appointed by the Chancellor from amongst the panel of three persons recommended by the Governing Body.

(2) No person shall be appointed as Registrar, unless he or she possesses such qualifications as are specified by the University Grants Commission, or its equivalent body so created by the Central Government.

(3) The Registrar shall sign all contracts and authenticate all documents or records for and on behalf of the University.

(4) The Registrar shall be the Member-Secretary of the Governing Body, the Board of Management and the Academic Council but he or she shall not have the right to vote.

(5) The Registrar shall exercise such other powers and perform such other functions, as may be prescribed.

The Chief Finance and Accounts Officer

12 (1) The Chief Finance and Accounts Officer shall be appointed by the Chancellor in such manner, as may be prescribed.

(2) No person shall be qualified to be appointed as Chief Finance and

Special Secretary to Government of Punjab
Department of Higher Education and Languages.



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Accounts Officer, unless he has passed the Chartered Accountancy Test conducted by the Institute of Chartered Accountants of India.

(3) The Chief Finance and Accounts Officer shall exercise such powers and perform such functions, as may be prescribed.

13. (1) The University may appoint such other officers, as it may deem necessary for its smooth functioning. Other Officers.

(2) The manner of appointment of such other officers of the University and their powers and functions shall be such, as may be prescribed.

14. The following shall be the authorities of the University, namely: -

- (i) the Governing Body; Authorities of the University.
- (ii) the Board of Management;
- (iii) the Academic Council;
- (iv) the Finance Committee; and
- (v) such other authorities as may be declared by the statutes to be the authorities of the University.

15. (1) The Governing Body of the University shall consist of the following persons, namely: - The Governing Body.

- (a) the Chancellor; : Chairman
- (b) the Vice-Chancellor; : Member
- (c) five persons nominated by the Foundation out of whom three shall be eminent educationists; : Members
- (d) one expert of management or information technology from outside the University nominated by the Chancellor; : Member
- (e) one expert of finance nominated by the Chancellor; : Member
- (f) one eminent educationist nominated by the Secretary to Government of Punjab, Department of Higher Education in consultation with the Chancellor; and : Member
- (g) the Administrative Secretary to Government of Punjab, Department of Higher Education or his representative not below the rank of Joint Secretary. : Member


Special Secretary to Government of Punjab
Department of Higher Education and Languages.



(2) The Governing Body shall be the supreme body of the University. It shall perform the following functions, namely: -

- (a) to provide general superintendence and to give directions for controlling the functioning of the University in accordance with the statutes, the ordinances and the regulations;
- (b) to review the decisions of other authorities of the University in case these are not in conformity with the provisions of the statutes, the ordinances and the regulations;
- (c) to approve the budget and annual report of the University;
- (d) to lay down the extensive policies to be followed by the University; and
- (e) to exercise such other powers, as may be prescribed by the statutes.

- (3) The Governing Body shall meet at least twice in a calendar year.
- (4) The quorum for meeting of the Governing Body shall be six.

The Board of Management

16. (1) The Board of Management shall consist of the following members, namely: -

- (a) the Chancellor; : Chairperson
- (b) the Vice-Chancellor; : Member
- (c) five members of the Foundation nominated by the Foundation; : Members
- (d) three persons who are not the members of the Foundation, nominated by the Foundation; : Members
- (e) two persons, from amongst the teachers nominated by the Foundation; : Members
- (f) Director Higher Education, Punjab as representative of the State Government; and : Member
- (g) two teachers nominated by the Chancellor. : Members

(2) The Board of Management shall exercise such powers and perform such functions, as may be prescribed.

(3) The Board of Management shall meet at least twice in a calendar year.

(4) The quorum for meeting of the Board of Management shall be seven.

Special Secretary to Government of Punjab
Department of Higher Education and Languages.



17. (1) The Academic Council shall consist of the following members, namely: - The Academic Council.

- (a) the Vice-Chancellor; : Chairperson
- (b) one eminent academician nominated by the State Government as its representative; and : Member
- (c) such other members, as may be prescribed. : Members

(2) The Academic Council shall be the principal academic body of the University and it shall, subject to the provisions of this Ordinance, the statutes, the ordinances and the regulations, coordinate and exercise general supervision over the academic policies of the University.

(3) The quorum for meeting of the Academic Council shall be such, as may be prescribed.


18. (1) The Finance Committee shall consist of the following members, namely: - The Finance Committee.

- (i) the Vice-Chancellor; : Chairperson
- (ii) the Dean Academic Affairs; : Member
- (iii) the Registrar; : Member
- (iv) two persons nominated by the Foundation out of whom one shall be a Financial Expert; and : Members
- (v) the Chief Finance and Accounts Officer. : Member-Secretary

(2) The members nominated by the Foundation shall hold office for a period of two years.

19. (1) The Chief Accounts and Finance Officer shall get the annual budget of the University prepared along with the requisite documents and submit the same to the Finance Committee for its approval. The Chief Accounts and Finance Officer shall also get the accounts of the annual income and expenditure of the University prepared and shall get the same audited from the Chartered Accountant so appointed by the Finance Committee in this regard. Functions of the Finance Committee.

(2) The budget approved by the Finance Committee along with the note with regard to the audit of income and expenditure of the University, referred to in sub-section (1), shall be placed before the Chancellor for its approval.


Special Secretary to Government of Punjab
Department of Higher Education and Languages.





14 PUNJAB GOVT. GAZ. (EXTRA), AUGUST 20, 2021
(SRVN 29, 1943 SAKA)

- (3) The Finance Committee shall tender advice to the Chancellor on financial matters of the University.
- Other authorities 20. The composition, constitution, powers and functions of authorities under clause (v) of section 14, shall be such, as may be prescribed.
- Disqualification for membership of an authority or body 21. A person shall be disqualified for being a member of any of the authorities or bodies of the University, if he, -
(i) is of unsound mind and stands so declared by a competent court; or
(ii) is an un-discharged insolvent; or
(iii) has been convicted of any offence involving moral turpitude; or
(iv) has been punished for indulging in or promoting unfair practice in the conduct of any examination in any form and anywhere.
- Acts or proceedings not to be invalidated due to vacancies 22. No act done, or proceedings taken, under this Ordinance by any authority or other body of the University shall be invalid merely on the ground of, -
(a) any vacancy or defect in the constitution of the authority or body; or
(b) any defect or irregularity in nomination or appointment of a person acting as member thereof; or
(c) any defect or irregularity in such act or proceeding not affecting the merits of the case.
- Filling up of emergent vacancies 23. If any vacancy occurs in any authority or body of the University due to death, resignation or removal of a member or due to change of capacity in which he or she was appointed or nominated, the same shall be filled in as early as possible by the authority or body, which had appointed or nominated such a member;
Provided that the person so appointed or nominated as a member of any authority or body of the University in an emergent vacancy, shall remain member of such authority or body only for the remaining tenure of the member, in whose place he or she is appointed or nominated, as the case may be.
- Committees 24. The authorities or officers of the University may constitute such committees as may be necessary for performing specific tasks by such committees. The constitution of such committees and their duties shall be such, as may be prescribed.

Special Secretary to Government of Punjab
Department of Higher Education and Languages.



25: (1) The Governing Body may, from time to time, make statutes or may amend or repeal the same. Power to make statutes.

(2) The statutes or any amendment made therein or repeal thereof, shall require the approval of the Chancellor.

(3) Subject to the provisions of this Ordinance, the statutes may provide for the following matters, namely:-

- (i) the constitution, powers and functions of the authorities and other bodies of the University, as may be constituted from time to time;
- (ii) the terms and conditions of appointment of the Vice-Chancellor and its powers and functions;
- (iii) the manner, terms and conditions of appointment of the Registrar, and the Chief Finance and Accounts Officer and their powers and functions;
- (iv) the manner, terms and conditions of appointment of other officers and teachers and their powers and functions;
- (v) the terms and conditions of service of the employees of the University;
- (vi) the procedure for arbitration in case of dispute between the University, officers, teachers, employees and students;
- (vii) the conferment of honorary degrees;
- (viii) the exemption of students from payment of tuition fee and for awarding them scholarships and fellowships;
- (ix) the policy of admissions, including regulation of reservation of seats, keeping in view of clause 9 of the Punjab Private Universities Policy, 2010;
- (x) the number of seats in different courses; and
- (xi) all other matters for which statutes are required to be made under this Ordinance.

(4) After the approval of the Chancellor, the statutes of the University shall be submitted to the State Government for its approval.

(5) The State Government shall consider the statutes submitted by the University and shall give its approval without or with such modifications, if any, as it may deem necessary and return the statutes to the University.


Special Secretary to Government of Punjab
Department of Higher Education and Languages.



(6) The University shall, with the approval of the Governing Body, communicate its concurrence to the statutes as approved by the State Government, and if it desires not to give effect to any or all of the modifications made by the State Government, it may give reasons thereof.

(7) After the statutes are finally approved by the State Government, these shall be published in the Official Gazette of the University.

(8) The statutes so made, shall not be amended without the approval of the State Government.


Power to make ordinances.

26. (1) The Governing Body may, from time to time, make ordinances or may amend, or repeal the same.

(2) Every ordinance or any amendment made therein or repeal thereof, shall require the approval of the Chancellor.

(3) Subject to the provisions of this Ordinance and the statutes, the ordinances may provide for the following matters, namely: -

- (i) the admission of students to the University and their enrolment as such;
- (ii) the courses of study to be laid down for the degrees, diplomas and certificates of the University;
- (iii) the degrees, diplomas, certificates and other academic distinctions;
- (iv) the fees to be charged for various courses, examinations, degrees and diplomas of the University;
- (v) the conditions for the award of fellowships, scholarships, studentships, medals and prizes;
- (vi) the conduct of examinations, including the terms of office, the manner of appointment and the duties of the examining bodies, examiners and moderators;
- (vii) the conditions of hostel facilities for students in the University;
- (viii) taking disciplinary action against the students of the University;
- (ix) the creation, composition and function of any other body, which is considered necessary for improving the academic standard of the University;
- (x) the manner of co-operation and collaboration with other Universities and institutions; and


Special Secretary to Government of Punjab
Department of Higher Education and Languages.



(3) all other matters which by this Ordinance or the statutes made thereunder are required to be provided by the ordinances.

(4) After the approval of the Chancellor, the ordinances of the University shall be submitted to the State Government for its approval.

(5) The State Government shall consider the ordinances submitted by the University and shall give its approval without or with such modifications, if any, as it may deem necessary and return the same to the University.

(6) The University shall, with the approval of the Governing Body, communicate its concurrence to the ordinances as approved by the State Government and if it desires not to give effect to any or all of the modifications made by the State Government, it may give reasons thereof.

(7) After the ordinances are finally approved by the State Government, these shall be published in the Official Gazette of the University.

(8) The ordinances so made, shall not be amended without the approval of the State Government.

27. (1) The Governing Body may, from time to time, make regulations or may amend, or repeal the same. Power to make regulations.

(2) Every regulation or any amendment made therein or repeal thereof, shall require the approval of the Chancellor.

(3) After the approval of the Chancellor, the regulations of the University shall be submitted to the State Government for its approval.

(4) The State Government shall consider the regulations submitted by the University and shall give its approval without or with such modifications, if any, as it may deem necessary and forward the same to the University.

(5) The University shall, with the approval of the Governing Body, communicate its concurrence to the regulations as approved by the State Government, and if it desires not to give effect to any or all of the modifications made by the State Government, it may give reasons thereof.

(6) After the regulations are finally approved by the State Government, these shall be published in the Official Gazette of the University.

(7) The regulations so made, shall not be amended without the approval of the State Government.


Special Secretary to Government of Punjab
Department of Higher Education and Languages.



University to follow rules, regulations etc. of the regulating bodies.

28. (1) The University shall be prohibited from conferring any Degrees, not recognized by the University Grants Commission or its equivalent body constituted by the Central Government.

(2) It shall be mandatory for the University to follow the University Grants Commission (Establishment and Maintenance of Standards in Private Universities) Regulations, 2003, or any other regulations made for private Universities by the University Grants Commission or any other regulatory bodies.

General Fund

29. (1) The University shall have General Fund to which shall be credited,-

- (a) fees and other charges received by the University;
- (b) any income received from consultancy and other work undertaken by the University; and
- (c) funds and grants received from any source by the University for research projects from any Government and non-Government funding agencies.

(2) The General Fund shall be utilized for the following purposes, namely:-

- (a) for the repayment of the debts, including interest charges thereto incurred by the University;
- (b) for the upkeep of the assets of the University;
- (c) for the payment of the cost of audit of the fund;
- (d) for meeting the expenses of any suit or proceedings;
- (e) for the payment of salaries and allowances of the officers and employees of the University and for the payment of any benefit to any such officer and employee;
- (f) for the payment of travelling and other allowances of the members of the authorities, committee or Board of the University;
- (g) for the payment of fellowships, scholarships, assistanceships and other awards to students belonging to economically weaker sections of the society or research associates or trainees, as the case may be, or to any student eligible for such awards;
- (h) for the payment of any expenses incurred by the University;
- (i) for acquisition of land or any kind of development work or likewise activities for the purpose of the University;

Special Secretary to Government of Punjab
Department of Higher Education and Languages.



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- (j) for the payment of cost of capital and repayment of loans incurred by the Foundation for setting up and running the University and the investments made therefore;
- (k) for the payment of charges and expenditure relating to the consultancy work undertaken by the University; and
- (l) for the payment of any expenditure, salaries, taxes, liabilities by the Foundation for or on behalf of the University.

30. The accounts of the income and expenditure of the University shall be audited by the Chartered Accountant of the University, and the same shall be submitted once in a year by the Chief Finance and Accounts Officer to the Governing Body for its approval. Annual report.

31. The University shall prepare and publish a semester-wise or annual, as the case may be, tentative Schedule of Examinations including various academic activities to be conducted by the University in the beginning of each academic session, but not later than the 30th August in a Calendar year. Examinations.

Explanation. - 'Schedule of Examinations' means the time table giving details about the time, day and date of the commencement of each paper which is part of the scheme of examinations including the details of practical examinations and viva-voce, if any.

32. (1) The University shall strive to declare the results of examinations conducted by it within a period of forty-five days from the last date of the examination of particular course but, in any case, not later than sixty days from the said date. Declaration of results.

(2) No examination or the result of an examination shall be held invalid only for the reason that the University has not followed the Schedule of Examinations.

33. The convocation of the University shall be held in every academic year for conferring degrees, diplomas, certificates or any other academic distinction or for any other purpose, in such manner, as may be prescribed. Convocation.

34. If any question arises with respect to the appointment or entitlement of any person, to be a member of any authority or other body of the University, the same shall be referred to the Chancellor, whose decision thereon shall be final and binding. Disputes concerning authorities and bodies.


Special Secretary to Government of Punjab
Department of Higher Education and Languages.



30 PUNJAB GOVT. GAZ. (EXTRA), AUGUST 20, 2021
(SRVN 29, 1943 SAKA)

Power to
remove
difficulties.

35. If any difficulty arises in giving effect to any of the provisions of this Ordinance, the State Government may, in consultation with the Chancellor, by an order published in the Official Gazette, make such provision, not inconsistent with the provisions of this Ordinance, as it may deem necessary for removing such difficulty.

Provided that no such order shall be made under this section after the expiry of a period of two years from the date of commencement of this Ordinance.

Protection of
action taken in
good faith

36. No suit or other legal proceedings shall lie against any officer or employee of the University for anything which is done in good faith or intended to be done in pursuance of the provisions of this Ordinance, the statutes, the ordinances or the regulations.

Transitory
Provisions

37. Notwithstanding anything contained in this Ordinance, the statutes, the ordinances or the regulations made thereunder, the Foundation may, subject to the availability of the funds, discharge all or any of the functions of the University for the purposes of carrying out the provisions of this Ordinance, the statutes, the ordinances and the regulations and for that purpose, may exercise such powers and perform such duties, which by this Ordinance or by such statutes, the ordinances and the regulations are to be exercised or performed by any authority or officer of the University, until such authority comes into existence or officer is appointed.

V.P. SINGH BADNORE,
Governor of Punjab.

S.K. AGGARWAL,
Secretary to Government of Punjab,
Department of Legal and Legislative Affairs.

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**DRAFT MINUTES OF
2ND MEETING OF THE GOVERNING BODY**

Date: Tuesday, May 3, 2022

Time: 6:00 pm to 7:30 pm

Microsoft Team Call - Link:

https://teams.microsoft.com/l/meetup-join/19%3ameeting_MzlzYzcwMmEtMjQ3OS00NDA3LWEzMGYtN2RhNzAwYzViNDJi%40thead.v2/0?context=%7b%22Tid%22%3a%2245798c33-1b43-4c01-bf3e-d8d655d3389c%22%2c%22Oid%22%3a%22a19d7970-546c-485b-83a7-a9b27590ee26%22%7d

Attendance:

| Sr. No. | NAME OF THE | DESIGNATION |
|---------|--------------------------|--|
| 1. | Mr. Neeraj Aggarwal | Chairperson of RHEF, Interim Chancellor |
| 2. | Prof. Rudra Pratap | Vice-Chancellor |
| 3. | Prof. S Shankar Sastry | Member |
| 4. | Mr. Rakesh Bharti Mittal | Member |
| 5. | Mr. Hitesh Oberoi | Member |
| 6. | Ms. Sumita Ambasta | Member |
| 7. | Mr. Sanjay Bhatnagar | Registrar (Member- |

The following attended the meeting as invitee:

| Sr. No. | NAME OF THE INVITEE | DESIGNATION |
|---------|---------------------|-----------------------------------|
| 1. | Ms. Pallavi Jain | Director of Strategy and Programs |
| 2. | Ms. Lata Sachdeva | Invitee |
| 3. | Mr. SK Jain | Invitee |
| 4. | Mr. Ramit | Invitee |
| 5. | Mr. Manas Fluoria | Invitee |
| 6. | Mr. Ashish Gupta | Invitee |

The following attended the meeting as non- member;
Mr. Sachin Verma, Manager, Plaksha University

The meeting commenced with a welcome address. It was confirmed that the quorum for the meeting was present. The items on agenda were taken up for the consideration and approval of the Board.

ITEM NO. 1:

TO GRANT LEAVE OF ABSENCE:



All the members were present except for the vacant seats as per The Plaksha University Punjab Act, 2021.

ITEM NO. 2:

CONFIRMATION OF THE MINUTES OF THE FIRST MEETING OF GOVERNING BODY:

The minutes of the First meeting of Governing Body held on Friday, October 1, 2021 via Zoom Call Meeting ID: 819 2591 9334, Meeting link <https://us02web.zoom.us/j/81925919334?pwd=d1o5M0tLVWFrZXo0SjVhSEZUMFZZQT09> from 6:30 pm to 8:00 pm as circulated to the members were confirmed. The minute book incorporating the minutes of the said meetings will be updated accordingly.

ITEM NO. 3:

ACTION TAKEN REPORT OF FIRST MEETING OF THE GOVERNING BODY OF THE UNIVERSITY:

Action Taken Report of the First meeting of Governing Body of the University presented in the meeting for information.

Members of the Governing Body briefly discussed, and action taken on various items were noted by the Board.

Concern was raised for budgeting and financial planning between the Financial Year (April to March) versus the Academic Year (July to June), which was suggested to be assessed and should be followed up in the coming few years.

ITEM NO. 4:

UPDATE ABOUT ACADEMIC PROGRAMS & EVENTS AT CAMPUS

Ms. Pallavi Jain, Director of Strategy and Programs, informed the Governing Body about the various ongoing academic programs at the Plaksha University Campus. She further apprised the board about the recruitment of Faculties and future requirement under various courses.

The members of the Governing Body were informed that the University has recently signed MoUs with two most reputed Indian Institutes namely IISc Bangalore and IIT Bombay. Faculty delegation visited the IISc campus and shared their experience with the members.

The members of the Governing Body briefly discussed about various aspects of the academic programs and following suggestion were made:

- Should consider running one year Master program/Professional Master program which is helpful for the students for their career prospectus as second degree/diploma.

The members were further informed that an AI conference was organized last week on university campus which was attended by a lot of people from academia in India and around the world. The conference was co-chaired by Professor Rajesh Gupta from UC San Diego, who leads their data science institute and Professor Uday Desai, who is the founding director of IIT Hyderabad and Prof. S Shankar Sastry was the honorary chair for the conference.

A few other suggestions were as follows:

- Actions should be taken with the Punjab Government to apply for the adjacent 50 acres land for future expansion of Plaksha University campus.
- Update about the appointment of Prof. S Shankar Sastry as Chancellor of Plaksha University Punjab.
- University to enter partnership with IIT Delhi and Cambridge University
- Compliance certificate with reference to regulatory rules and regulations needs to be a part of Governing Body agenda.

The members took note of the same.

ITEM NO. 5

TO DISCUSS THE ACADEMIC GOALS FOR YEAR 2022-23:

Ms. Pallavi Jain, Director of Strategy and Programs, informed the Governing Body about the future planning with respect to various academic ongoing programs at Campus. Steps are taken in order to provide opportunities to student for a one-year international visit, which will be funded by PLAKSHA and for this full support from the faculty mentors is required.

On the research and innovation side, four research labs will be launched this year. Initial funding for the research comes through philanthropy and process for external funding was also started. Steps were also taken to setup a separate legal entity to support funding.

On the faculty recruitment, members were informed that University tends to recruit few star faculty members at senior levels. Efforts are also being made to hire faculty in the field of Computer Science for which new innovative ideas were explored and will be taken into effect.

Members were further informed that University tends to close the Dean position for Undergraduate Program for which final interview with the candidate will be done by May 2022.

She further apprise the board that Teaching Studio for supporting the faculty along with Technical Art Studio for graphic designers, video editors will be operational by July, 2022. Apart from this a pedagogy workshop was conducted for new faculties before their joining. She further informed that recognition to the faculty will be done through Annual Teaching Awards.

Following Suggestions were made:



- Proper Patent program is required to add value to the University in future.

ITEM NO. 6

TO DISCUSS THE NON - ACADEMIC GOALS FOR YEAR 2022-23:

Ms. Pallavi Jain, Director of Strategy and Programs, update the members of Governing Body on campus operations. She further informed the Governing Body with reference to IT department of University where a faculty member from University of California, Irvine, who is a database expert, shows his interest in implementing a software under which a platform will be built up where data is stored in a manner which will be useful for the university in coming future.

Members were further informed that University is looking to appoint a Vice President for external engagement and a new Chief Financial Officer as the previous one stepped down for the position. Student exchange program framework is another thing which is required to be established in coming future.

Following suggestions were made:

- Smart deployment of CapEx and optimization of OpEx is important for future construction activities

ITEM NO. 7

TO DISCUSS ABOUT THE FIRST STATUTE OF PLAKSHA UNIVERSITY:

Ms. Pallavi Jain, Director of Strategy and Programs, informed the Governing Body about the Statutes required under the provisions of Punjab Private Universities Policy, 2010. She further apprised that a working group is required to be formed in order to make blueprints of the First Statute of Plaksha University.

She further apprised the members about the potential names of the working group member for their consideration.

- Rudra Pratap, Vice Chancellor
- Manas Fuloria, Founder & Trustee
- Krishna Palepu, Academic Advisory Board
- Pallavi Jain, Director of Strategy

The members of the Governing Body take note of the same and accord their approval.

The updated draft of the Statutes to be discussed with the Governing Body in the next meeting.

There being no other item on the agenda, the meeting ended with a vote of thanks by the Chairperson.



**DRAFT MINUTES OF
3rd MEETING OF THE BOARD OF MANAGEMENT**

Date: Wednesday, April 20, 2022

Time: 4:00 pm to 5:30 pm

Microsoft Team Call - Link:

https://teams.microsoft.com/l/meetup-join/19%3ameeting_MGVmZTRhOTgtOTkwZC00NzQyLThhYjAtM2QyZDlkMDc3NTdk%40thread.v2/0?context=%7b%22Tid%22%3a%2245798c33-1b43-4c01-bf3e-d8d655d3389e%22%2c%22Oid%22%3a%22a19d7970-546c-485b-83a7-a9b27590ee26%22%7d

Attendance:

| Sr. No. | NAME OF THE MEMBER | DESIGNATION |
|---------|--------------------------|--|
| 1. | Prof. Rudra Pratap | Vice-Chancellor |
| 2. | Mr. Ambarish Raghuvanshi | Member |
| 3. | Mr. Mohit Thukral | Member |
| 4. | Mr. Vikrant Bhargava | Member |
| 5. | Mr. Alok Mittal | Member |
| 6. | Ms. Meeta Malhotra | Member |
| 7. | Prof. Aditya Malik | Member |
| 8. | Dr. Amrik Sen | Member |
| 9. | Dr Rucha Joshi | Member |
| 10. | Ms. Pallavi Jain | Member |
| 11. | Mr. Ashwini Bhalla | Nominee, Secretary, Higher Education, Punjab |
| 12. | Mr. Sanjay Bhatnagar | Registrar (Member-Secretary) |

The following attended the meeting as invitee:

| Sr. No. | NAME OF THE INVITEE | DESIGNATION |
|---------|---|---|
| 1. | Ms. Kanchi Khanna | Director of Outreach and Admissions |
| 2. | Ms. Srabani Ghosh | Director of Tech Leaders Program |
| 3. | Lt Gen Amarjeet Singh, PVSM, AVSM**, SM (Retd). | VP, Administration |
| 4. | Ms. Radhika Gupta | Manager, Strategy, Vice Chancellor's Office |
| 5. | Ms. Vartika Bharti | HR Lead |
| 6. | Ms. Priyanka Saklani | Manager, Program (YTS) |

The meeting commenced with a welcome address. It was confirmed that the quorum for the meeting was present. The items on agenda were taken up for the consideration and approval of the Board.

ITEM NO. 1:**TO GRANT LEAVE OF ABSENCE:**

Leave of absence was granted to Dr. Saumya Jetley, who was unable to attend the meeting.

ITEM NO. 2:**CONFIRMATION OF THE MINUTES OF THE FIRST MEETING OF BOARD OF MANAGEMENT:**

The minutes of the Second meeting of Board of Management held on Friday, January 21, 2022 via Microsoft Team Call

https://teams.microsoft.com/l/meetup-join/19%3ameeting_YTM4OWY4ZDAtZmYyZC00NWFiLW11NjktYmFjYTc1NTIzZGNI%40thread.v2/0?context=%7b%22Tid%22%3a%2245798c33-1b43-4c01-bf3e-d8d655d3389c%22%2c%22Oid%22%3a%22a19d7970-546c-485b-83a7-a9b27590ec26%22%7d

from 4:30 pm to 6:00 pm as circulated to the members were confirmed. The minute book incorporating the minutes of the said meetings will be updated accordingly.

ITEM NO. 3:**ACTION TAKEN REPORT OF SECOND MEETING OF THE BOARD OF MANAGEMENT OF THE UNIVERSITY:**

Action Taken Report of the Second meeting of Board of Management of the University presented in the meeting for information.

The action taken on various items were noted by the Board.

ITEM NO. 4**UPDATE ABOUT CURRENT ACADEMIC PROGRAMS AT CAMPUS:**

Prof. Aditya Malik, Dean of Academic Affairs, shared the update on Undergraduate programme. He briefly apprised the members about the First Semester which was completed in the month of February 2022 along with declaration of grades. He further informed that a rigorous process was adopted on evaluation of students vis - a - vis grading system.

Prof, Malik further shared that second semester at campus commenced on 28th February 2022 and mid-term evaluation will be conducted in the following weeks. He further apprised that University has introduced two Life skills courses in the name of "Engineering sense & estimation" and "Introduction to Yoga & Ayurveda principles" for the students along with workshops for which a teaching fellow has been hired to teach academic writing, research and integrity and some individual tutorials to students. These workshops will be conducted once a month for students in ongoing semester.

Ms. Srabani Ghosh, Director of Technology Leaders Program updated the members about the Technology Leaders Program. She informed the members that currently 6th term of the programme is on its way which is "Capstone". She further informed that for the coming two months students will be closely associated with industry or faculty mentors or on their own entrepreneurial ventures on specific problems in various domains. She further informed briefly that under capstone program there are 22 projects out of which 17 were associated with mentors besides projects in the field of research and entrepreneurship.

She further apprised that students will return to campus in the month of June to complete their last two terms before graduating in the month of July, 2022.

Mr. Alok Mittal shared the update on Young Tech Scholars Program. He informed the members that initial two years of the program were organized at Pathway School, Gurgaon and other two year were done through online mode. The program is in its fifth year which will now be conducted at Plaksha Campus.

The members were informed that program is scheduled to be of two weeks in 2 cohorts of 85 students and faculty/research fellows will be engaged from Plaksha for smooth execution of the program. Going forward, Plaksha students will also be engaged as volunteers to gain experience in teaching.

The Board of Management took a note of the same.

ITEM NO. 5

UPDATE ABOUT EVENTS HAPPENING AT CAMPUS:

Ms. Pallavi Jain, Director of Strategy and Programs informed the board about various events at campus outside the classrooms. These events are related to Horticulture, Adventure trips, "Plakshathon 1.0" a marathon organized by Plaksha's students club namely Sports club and Kartavya Club.

The students from Plaksha have emerged as winners at HackNYU conducted by New York University, with Hackers from all over the world.

ITEM NO. 6

UPDATE ON OUTREACH AND ADMISSIONS FOR THE UNDERGRADUATE PROGRAMME, TECH LEADERS PROGRAMME, YOUNG TECH SCHOLARS AND PhD PROGRAMME, PLAKSHA UNIVERSITY:

Ms. Kanchi Khanna, Sr Director of Outreach and Admissions apprised the members about admissions to the Undergraduate Program. She mentioned about the target intake of students. She stated that there is an increase in 48% of applications as compared to last year and that applications are received from PAN India.

The members were concerned about decreasing number of applications with reference to women students which was discussed by the members of the board and it was suggested to form a sub

group including women founders along with faculty and staff members to come up with some solutions.

Ms. Priyanka Saklani shared update on Young Tech Scholars Program target intake of students. She stated that there is an increase in 59% of applications as compared to last year.

Ms. Srabani Ghosh, Director of Technology Leaders Program updated the members about the target intake of Tech Leaders Program. She informed the members that applications have decreased with reference to last year, but quality of students is much better. She further apprised that many events were organized to boost outreach of the program and more efforts will be given on offline events by reaching out to different colleges in north India.

Ms. Pallavi Jain, Director of Strategy and Programs informed the members about PhD program which is proposed to start this year with a target intake of 10 students. She further stated that all the selected candidates have completed their Masters from reputed institutions.

ITEM NO. 7

UPDATE ON PARTNERSHIPS WITH VARIOUS INSTITUTIONS:

Ms. Radhika Gupta informed the Board about the MoUs signed with various University around the world for Curriculum Development, Joint Research, Student Exchange, Faculty Mobility. It was further informed that University has recently signed MoUs with two most reputed Indian Institutes namely IISc Bangalore and IIT Bombay.

It was further stated that there is a delegation planning visit to both the campuses in the month of May 2022 and will start collaborating with them which will be of great value for Plaksha University.

Plaksha organised a CRISPR Workshop on March 30 2022. It was a brain storming workshop on 'creating a world class ecosystem for CRISPR technologies' to solve the grand challenges of healthcare, energy and climate. This workshop aims to bring together experts (researchers and scientists) who are defining and leading the CRISPR ecosystem in India.

It was further informed that Plaksha is hosting a three-day academic conference on "Artificial Intelligence". The main objective of this conference is diversified into three areas which has relevance in CS field. The conference will have speakers of international repute who will be physically present at the meeting and some of them will be available with us through online mode of communication.

Plaksha is also hosting an event by TiE on 29th April, 2022 which will be a pre - event before the main event which will be organized at Chandigarh.

The members of the Board took note of the same.



ITEM NO. 8**UPDATE ON FACULTY AND STAFF RECRUITMENT:**

Faculty recruitment plan for each major programme at Plaksha University was shared. It was further informed to the members that recruitment of faculty is on track and by next semester targets are expected to be achieved.

The Board was informed about the profiles of recently recruited faculty.

The Board was informed by the H R about the current non-academic staff recruitments of the Plaksha University. They were further informed about the major recruitments and the process which will be followed including engagement of KornFerry for recruitment of certain top position at both Academic as well as Non Academic level.

The members of the Board took note of the same.

ITEM NO. 9**UPDATE ABOUT CONSTRUCTION AND ONGOING ACTIVITIES AT CAMPUS:**

Lt Gen Amarjeet Singh, PVSM, AVSM**, SM (Retd), Vice President, Administration, provided brief update on construction / project activities at the Plaksha University campus. The present status and scheduled construction plan for various buildings viz Academic Block, Research Block, Dining and Sports Block etc was discussed including Landscape and Outdoor works.

It was informed that bids have been received against tender circulated for Student Residence Block 2 and Letter of Intent is in process to be issued by end of April 2022.

It was informed to the Board that new Project Management Consultant (PMC) has been on board. It has also been decided that the new projects will be awarded on turn-key basis.

The Board of Management took a note of the same.

ITEM NO. 10**UPDATE ON VARIOUS FUNCTIONAL COMMITTEES OF PLAKSHA UNIVERSITY:**

The Board was informed that the University has constituted key committees as per UGC and other regulations as applicable to carry out the specific functions as mentioned below:

- Internal Complaints Committee – as per POSH regulation
- Anti Ragging Committee
- Anti Ragging Squad
- Nodal Officer for Anti-Ragging measures
- Disciplinary Committee
- University Grievance Redressal Committee
- Ethics Committee

A handwritten signature in blue ink, appearing to be "Anuj", is written over the bottom right portion of the Plaksha University logo.

The name of University has been included in the list of universities maintained by the UGC under Section 2(f) of the UGC Act 1956 and is displayed on the UGC Website.

The UGC has issued a letter dated 25th March, 2022 to University requiring us to submit information, afresh; leading to inspection and other formal requirements.

The Board took note of the same.

Mr. Ashwini Bhalla, nominee from the Government of Punjab expressed his compliments and appreciation for the accomplishments made by the University so far. He further informed that the state government has issued various circulars for alignment of university policies with National Education Policy “Ek Bharat Shreshtha Bharat”, National Academic Depository (N A D), Academic Bank of Credit (A B C) and National Apprenticeship Training. It was advised that the University may appoint a Nodal officer for each of the program initiated by Government of India/Government of Punjab.

There being no other item on the agenda, the meeting ended with a vote of thanks to the Chairperson.



**MINUTES OF
3rd MEETING OF THE ACADEMIC COUNCIL**

Date: Wednesday, April 13, 2022

Time: 4:00 pm to 5:30 pm

Microsoft Teams: https://teams.microsoft.com/l/meetup-join/19%3ameeting_MWVlNjEwMmMtNzIxYi00MWZhLTg2ZjgtMTMwZmViZDBhNzAw%40thread.v2/0?context=%7b%22Tid%22%3a%2245798c33-1b43-4c01-bf3e-d8d655d3389c%22%2c%22Oid%22%3a%22a19d7970-546c-485b-83a7-a9b27590ee26%22%7d

The following members were present

| Sr. No. | Name of the member | Designation |
|---------|--------------------|--|
| 1. | Prof. Rudra Pratap | Vice-Chancellor (Chairperson) |
| 2. | Prof. Aditya Malik | Dean of Academic Affairs |
| 3. | Dr. Monika Sharma | Member |
| 4. | Dr. Ravi Jasuja | Member |
| 5. | Dr. Ashwani Bhalla | Nominee, Secretary, Higher Education, Punjab |
| 6. | Sanjay Bhatnagar | Registrar (Member-Secretary) |

Following attended the meeting as invitee:

| Sr. No. | Name of the invitee | Designation |
|---------|---------------------|--|
| 1. | Dr. Amrik Sen | Director of Undergraduate Programs & Assistant Professor |
| 2. | Pallavi Jain | Director of Strategy and Programs |
| 3. | Srabani Ghosh | Director of Technology Leaders Program |
| 4. | Rohit Chadha | Manager, Academic Affairs Office |
| 5. | Radhika Gupta | Manager, Strategy, Vice Chancellor's Office |
| 6. | Priyanka Saklani | Manager, Young Technology Scholars Program |

The meeting commenced with a welcome address by the Chair. Prof. Rudra Pratap, Chairperson confirmed that the quorum was present. The items on the agenda were taken up for the consideration and approval of the Academic Council.



ITEM NO. 1**TO GRANT LEAVE OF ABSENCE:**

Leave of absence was granted to Prof. Ravi Kothari, Member, Prof. Naveen Garg and Prof. Bharadwaj Amrutur, who were unable to attend the meeting

ITEM NO. 2**CONFIRMATION OF THE MINUTES OF THE SECOND MEETING OF ACADEMIC COUNCIL:**

The minutes of the second meeting of the Academic Council held on Tuesday, January 18, 2022 via Microsoft teams from 4:00 PM to 5:30 PM as circulated to the members of the Academic Council were confirmed.

ITEM NO. 2**STATUS REPORT OF SUGGESTIONS GIVEN BY MEMBERS IN THE SECOND MEETING OF THE ACADEMIC COUNCIL HELD ON JANUARY 18, 2022:**

A status report of the suggestions given by members in the second meeting of the Academic Council was presented and the council was apprised of the action taken. The council was also informed that it is proposed to introduce a bridge course in Physics before the start of the first semester for students without a Physics background in grade 11/12. Chair suggested that to effectively run this course, the admission process should be completed at least four weeks before the start of semester classes. The suggestion was noted and will be incorporated.

ITEM NO. 3**KEY HIGHLIGHTS OF ACADEMIC PROGRAMS FROM JAN'22 TO APR'22:**

The key highlights of academic programs, i.e., undergraduate, TLP (Technology Leaders Program), PhD and YTS (Young Tech Scholars), academic initiatives and faculty recruitment were shared with the council. The opening of the Plaksha Center for Communication (name to be finalized) was also announced.

The Academic Council took note of the same.

ITEM NO. 4**TO CONSIDER AND APPROVE AMMENDMENDS TO UNDERGRADUATE PROGRAM ACADEMIC POLICY:**

Dr. Amrik Sen, Director of Undergraduate Programs (DUGP) proposed amendments to the Undergraduate Academic Policy and the addition of a new section on the re-evaluation of grades. The proposals were put before the council to seek its approval.

- I. With respect to the amendment to section 3.3, grade finalization, of Undergraduate Program Academic Policy, the Chair suggested that the date for finalization of grades should be incorporated in the academic calendar and a reminder should also be sent to Faculty through Vaani before the start of examinations and after the examinations to finalize grades by the due date. This suggestion was noted and will be implemented.
- II. With respect to section 3.6 of the Undergraduate Academic Policy (re-evaluation of grades), DUGP clarified that any correction to mistakes in grading before the finalization of grades does not have to go through a re-evaluation of grades process and can be resolved by the Faculty before they submit the grades.

The Academic Council reviewed the proposals and passed the following resolution:

Resolution number – AC/3/R1/14

“RESOLVED THAT amendment to sections 3.2, 3.3 & 3.4 of Undergraduate Program Academic Policy is accepted as tabulated below”

| Section no | From | To |
|------------|---|---|
| 3.2 | Letter Grade NC - This grade will be awarded if the student is not able to meet the minimum passing criteria set forth by the instructor in the course. | Letter Grade NC - This grade will be awarded if the student is not able to meet the minimum passing criteria set forth by the instructor in the course. No student can graduate with an NC obtained in any course counted towards the minimum credit requirements for graduation. An NC obtained in a named course would have to be redeemed by the student by repeating the same course or its approved equivalent course during its next offering. |
| 3.2 | Letter Grade I - An “Incomplete” grade will be awarded in case a student does not complete any assessment or evaluation exercise as a result of which they do not meet the passing criterion. [This is only for medical/social emergencies beyond control of students or cases of pending disciplinary investigation and must be approved by the Dean, Academic Affairs]. | Letter Grade I - An “Incomplete” grade may be awarded in case a student does not complete one or more assessments or has a pending make-up examination. This is applicable only for medical/social emergencies beyond the control of students (must be substantiated by supporting documents) or cases of pending disciplinary investigation. The recommendation for I grade must be made by the instructor no later than five days after the end semester examination of that course. This must be approved by the Dean, Academic Affairs. |
| 3.2 | - | CGPA & SGPA Formula: The overall academic performance of the student |

| | | |
|-----|---|--|
| | | <p>will be captured by means of a Cumulative Grade Point Average (CGPA) and a Semester Grade Point Average (SGPA), both on a scale of 4.0, awarded at the end of each semester. These numbers will be calculated according to the following formula: $\frac{(GP1 * C1 + GP2 * C2 + \dots + GPn * Cn)}{(C1 + C2 + \dots + Cn)}$ where GPi = grade points obtained in a course, Ci = number of credits assigned for that course, n = Total number of courses taken by the student in a particular semester (for SGPA) or in all the previous semesters as well (for CGPA)</p> |
| 3.3 | | <p>Grade Finalization - The grades for every course will be due no later than the 5th working day after the final end semester examination/ assessment after which instructors of the course shall not accept any further assignment submissions from the students and/or shall not be allowed to alter the recorded final grades. The Director of UG shall convene a board of examination meeting with all concerned faculty members, no later than the 6th working day from the date of the last end semester examination/assessment in order to finalize and approve the final grades for each course and the semester GPA.</p> |
| 3.4 | <p>Make-up examination policies - These will be applicable only for the written exam portion of the course assessment. These exams will be offered within two months from the date of examination. Make-up exams will be offered to those students who are not able to appear for the written exams (mid-sem exams and/or end-sem exams) due to unforeseen circumstances, eg. unexpected medical emergencies to self or immediate family members, effects of natural disasters, accidents, etc.</p> | <p>A make-up examination is applicable for the written exam (mid sem and/or end sem). Those students who were not able to appear for the written exam due to unforeseen circumstances, example unexpected medical emergencies to self or immediate family members, effects of natural disasters, accidents, etc., are eligible to apply. An application (substantiated by supporting documents) must be submitted to the course instructor by the</p> |




| | | |
|--|--|--|
| | Any other missed assessments may be re-taken in consultation with the course instructor. | student no later than one day after the date of the examination • These examinations can be conducted any time at the discretion of the course instructor for all components other than end semester • In case of make-up examination for the end semester, these exams will be offered within two months from the date of examination |
|--|--|--|

Resolution number - AC/3/R2/15

"RESOLVED FURTHER THAT addition of section 3.6 to Undergraduate Program Academic Policy is accepted and is tabulated below"

| Section no | From | To |
|------------|------|--|
| 3.6 | | Re-evaluation of Grades - The grounds for a re-evaluation request are restricted to claims that a miscalculation of the grade occurred or ii) the evaluation of the work was demonstrably unfair. If a re-evaluation request is filed, an interim notation to the effect that the grade is "under appeal" shall accompany the grade until the final disposition of the request. Request must be made to the instructor no later than the following 7 days of declaration of grades and is forwarded to the Dean, Academic Affairs for approval. The re-evaluation shall be completed within fifteen 15 days of receiving request. A grade may be maintained, raised, or lowered because of a re-evaluation request. |

ITEM NO. 5

TO CONSIDER AND APPROVE CHANGE IN FRESHMORE YEAR CURRICULUM:

Director of Undergraduate Programs proposed two structural changes in the Freshmore year curriculum, i.e.,

- I. Swap Foundations of Physical World course in semester 1 with Nature's Machine course in semester 2, and
- II. Change course in semester 3 from "Mathematics for Continuous Systems" to a course titled "Calculus in Higher Dimensions". He also informed the Academic Council that




due to this change in course, the total credits for semester 3 will be reduced from 21 to 20.

The Chair welcomed the changes and suggested that the proposed new course "Calculus in Higher Dimensions" be assigned (2+0+1; Theory+Practice+Lab credit structure). The suggestion was noted and will be incorporated.

The Academic Council was also informed about the rationale behind changing the mathematics course in semester 3. The courses being offered in Freshmore semesters should have applicability across all four majors that University offers. It was found that Mathematics for continuous system course may be more relevant to only one of the four majors rather than across all majors whereas demand for topics to be covered under Calculus in Higher Dimensions course will be far greater across the four majors.

The council was also informed that Mathematics for Continuous system will not be omitted from the curriculum but will be offered as an open elective later in the engineering curriculum.

Prof. Aditya Malik, Dean of Academic Affairs informed the Academic Council that after the end of semester 1, the Office of Academic Affairs and Faculty had a rigorous meeting for grades moderation to arrive at a balanced spectrum of grades. He also informed the council that, University instituted a feedback mechanism for the students on teaching and course content.

The Academic Council reviewed the proposals and passed the following resolution:

Resolution number – AC/3/R3/16

"RESOLVED THAT the Foundations of Physical World course in semester 1 should be swapped with Nature's Machine course in semester 2."

Resolution number – AC/3/R4/17

"RESOLVED FURTHER THAT the Mathematics for Continuous Systems course in semester 3 should be changed to the Calculus in Higher Dimensions course

Resolution number – AC/3/R5/18

"RESOLVED FURTHER THAT the Calculus in Higher Dimensions course will be a 3-credit course and the total number of credits in semester 3 will be 20 credits."

ITEM NO. 6

UPDATE ON THE PhD PROGRAMME:



Page | 6 of Page 8

Prof. Aditya Malik, Dean of Academic Affairs, apprised the council that University has completed round one of admission to PhD program and currently round 2 of admission is under progress. Out of 23 applications received in the first round, 4 applicants have been selected and offers rolled out.

The Academic Council took note of the same.

ITEM NO.7

UPDATE ON THE POSTGRADUATE DIPLOMA PROGRAMME:

Ms Srabani Ghosh, Director of Technology Leaders Program apprised the council of the progress made by students of the TLP program in the academic session 2021-22. She informed the council that this is the third cohort of the program. The program spans eight terms and at present students are in the sixth term. They are working on capstone projects such as a fire risk assessments simulation tool that utilizes data from the forest department, converting audio into text, agri-tech, etc.

Dr Ashwani Bhalla, Nominee, Secretary, Higher Education, Punjab suggested that students should also take up projects dealing with community problems in the state of Punjab such as how to increase the level of the water table, innovative agriculture practices, etc. The suggestion was noted and will be incorporated.

The Chair informed the council that the University is coming up with many research centres including the water research centre and the University campus will be used as a live lab to test solutions developed by these research centres. Solutions will be then scaled up for Mohali city and thereafter for the state of Punjab.

The Academic Council took note of the same.

ITEM NO.8

UPDATE ON THE YOUNG TECHNOLOGY SCHOLARS PROGRAM:

Ms Priyanka Saklani, Manager of Young Technology Scholars (YTS) programs apprised the council of the upcoming YTS program which will be held on the Plaksha University campus for the first time from June 12 to July 3.

Dr. Ashwani Bhalla, Nominee, Secretary, Higher Education, Punjab appreciated the overall program design and structure meant exclusively for high school students. Priyanka also informed the council that the program is open to all and there is a selection process and criteria in place.

Dr Ravi Jasuja, a member of, the Academic Council informed the council that at present YTS program has a limited number of seats in view of the number of students the University can

accommodate on campus in summer. However, going ahead University is developing YTS at-scale programs which will be rolled out on a national level.

The Academic Council took note of the same.

ITEM NO.9

UPDATE ON ACADEMIC INITIATIVES:

Ms Radhika Gupta, Manager, Strategy, informed the Academic Council that the University organized the 1st CRISPR workshop on March 30, 2022, where experts in the field were invited to foster collaborations. Going forward, University is planning to set up a CRISPR India forum that helps to identify the right research direction and infrastructure requirements.

She also informed the council that the University is also organizing its first conference on Artificial Intelligence from April 27 to 29, 2022. One of the objectives of this conference, is to build a community of researchers in the field and identify and attract potential faculty candidates.

The Academic Council took note of the same.

ITEM NO. 10

UPDATE ON FACULTY RECRUITMENT:

Ms Radhika Gupta, Manager, Strategy, informed the council that University currently has nineteen faculty on board and has rolled out four more offers. She also requested support from Academic Council members to widen the network and broaden outreach especially in the areas of CSAI/ Data science and applied mathematics/ statistics

The Academic Council took note of the same.

There being no other item on the agenda, the meeting ended with a vote of thanks to the Chairperson.



**University Grants Commission
Appendix XIII D**

Minutes of the Third Finance Committee Meeting of Plaksha University, Punjab held on 18th April 2022 at 6:30 pm.

| | | |
|-----------------|----------------------|--|
| Present: | Prof. Rudra Pratap | Vice-Chancellor |
| | Prof. Aditya Malik | Dean of Academic Affairs |
| | Sanjay Bhatnagar | Registrar |
| | Ambarish Raghuvanshi | Founder and Trustee (Person Nominated by the Foundation) |
| | Somveer Singh | Sr Manager Finance (Invitee) |
| | Pallavi Jain | Director Strategy & Program (Invitee) |
| | Amarjeet Singh | VP Administration (Invitee) |

1. Vice-Chancellor shall be the Chairperson for this meeting.
2. **Before starting the agenda of the meeting, minutes of previous meeting were laid down and discussed. Following points were discussed:**
 - Authorization matrix has been circulated to the respective Department Heads.
 - Credit card for Plaksha University has been received and in custody of Finance Department. Credit Limit of Plaksha University Credit Card is Rs, 10 Lakh.
 - Monthly summary on accrual basis rather than payment basis will be implemented from April 2022 Quarter.
 - Investments in FD are maintained by the Foundation for more than 30 days
3. Meeting has been called upon to discuss the following Agenda:

Agenda Item 1: Discussion on Updates – Shared information on the regular updates with the committee members.

- **FCRA Return** – Quarterly return Filed for Q-4 Mar -2022 with in due date.
- **FCRA Chief Functionary officer** – New Chief functionary officer updated (Gen Amarjeet Singh).
- **Internal Audit:** Internal Audit still on hold, It will re-start in first week of May 2022 for Q-2, Q-3 and later Q-4.

Committed advised as below:

It was advised by the committee that internal audit needs to be completed on urgent basis and going forward internal audit should be completed in a given time frame.

- **Compliances:**
 - GST – Plaksha GST registration granted.
 - 80G Registration – Provisional Registration Granted.
 - 12A Registration – Provisional Registration Granted.
 - Professional tax Registration – Granted.

Agenda Item 2: Approvals needed –

- Approval from committee is provided for opening fees collection account with Axis bank - Plaksha University Punjab.
- **Signatories:**
 - Committee approved deletion of Name/Signatures of Mr. Amit Gupta from respective Government/Private authorities.
 - New authorised signatory will be finalized by the committee in its next meeting along with Vice Chancellor



Agenda Item 3: YTD Mar'22 Actuals Vs Budget - Summary – Actual spending for Year-to-Date Mar'22 is presenting with the committee members. Following suggestion were advised by the committee members:

- To provide analysis/ reasons where budget vs. actuals is significantly different.
- Compare fundraise expectation at the start of the academic year (to be provided by development team) with actual drawdown.
- Installments with reference to Land in the name of RHEF needs to be released on time.
- Going forward all matters with reference to refund of Fees needs to be recommended by the Academic Council.

Members took note of the same.

Agenda Item 4: Cash Flow Forecast - Cash Flow Forecast for Year-to-Date Mar'22 is presenting with the committee members. Following suggestion were advised by the committee members:

- Compare fundraise expectation at the start of the academic year (to be provided by development team) with actual drawdown every quarter.
- Going forward Cash Flow needs to be reserved in order to cover any future contingencies.

Agenda Item 5: Treasury – Current Investments were presented before the committee for their review. Suggestions were given by member as below:

- Investments should be made with low risk which in turn also benefit to the foundation.
- No delays should be made with respect to investment options

Agenda Item 6: Compliance update – Compliance checklist are presenting for discussion.

- **Present status on statutory compliances is as mentioned below:**

The name of the university has been included in the list of universities established under Section 2 (f) of the U G C Act, 1956. The list is maintained by the UGC on its website www.ugc.ac.in.

University was registered on All India Survey on Higher Education (AISHE) portal which is required to comply with Anti-Ragging measures.

University was also registered with National Academic Depository (NAD) which serves as a repository for academic records and facilitates issue and verification of transcripts.

Finance Committee was further informed that following University level Committees were constituted under various regulations:

- Internal Complaints Committee - as per POSH regulation
- Anti-Ragging Committee
- Anti-Ragging Squad
- Nodal Officer for anti - ragging measures
- Disciplinary Committee



- University Grievance Redressal Committee
- Ethics Committee

Committee was further informed that University received letter from UGC dated March 25 2022 with reference to the submission of Plaksha University Punjab Act 2021 whereby we are required to submit updated information to UGC afresh, within 3 months from the date of receipt of said letter. The U G C will than take up the process regarding inspection of the university.

Board took note of the same.

- **Projects Compliances were presented before the board which was taken on note:**

| Description | Department | Status |
|---|---------------------|---|
| Hazardous waste approval | PPCB | Obtained |
| NOC of sewer and solid waste disposal | GMADA | Obtained |
| NOC of Storm | GMADA | Obtained |
| Sewage Connection | GMADA | Obtained |
| Biomedical waste approval | PPCB | Applied |
| CTO(Air and Water)Renewal | PPCB | Applied CTO Air 31 March CTO water 30 June |
| Permanent Water connection & NOC | GMADA | Under process |
| A1,A2,DR2,Audi,utility Block,Girls Hostel | GMADA | Structural Stability certificate from third party agency is now required as per new policy of GMADA |
| Revised building plans for Boys Hostel | GMADA | Needs to be resubmitted with revised master plan |
| Drawings of Fire NOC | Fire deptt | Academic 4 th floors will be approved by Fire officer after getting approval from Gmada |
| Upgrade Electrical Load to 900KVA | PSPCL/Invest Punjab | Will be processed in June after arrival of second chiller |

- **H R Compliances were presented before the Committee Members**

- Provident Fund – Deposited till Feb'2022 and under process for March'22
- ESIC – We Have No Cases
- POSH – Annual Report has been submitted to Mohali DO

Committee members took note of the same.



- Contractual labor Compliances were presented before the members and following suggestions were advised.

3rd party audit on statutory compliances to be done.

There being no other item on agenda, the meeting ended with a vote of thanks to the chairperson.

